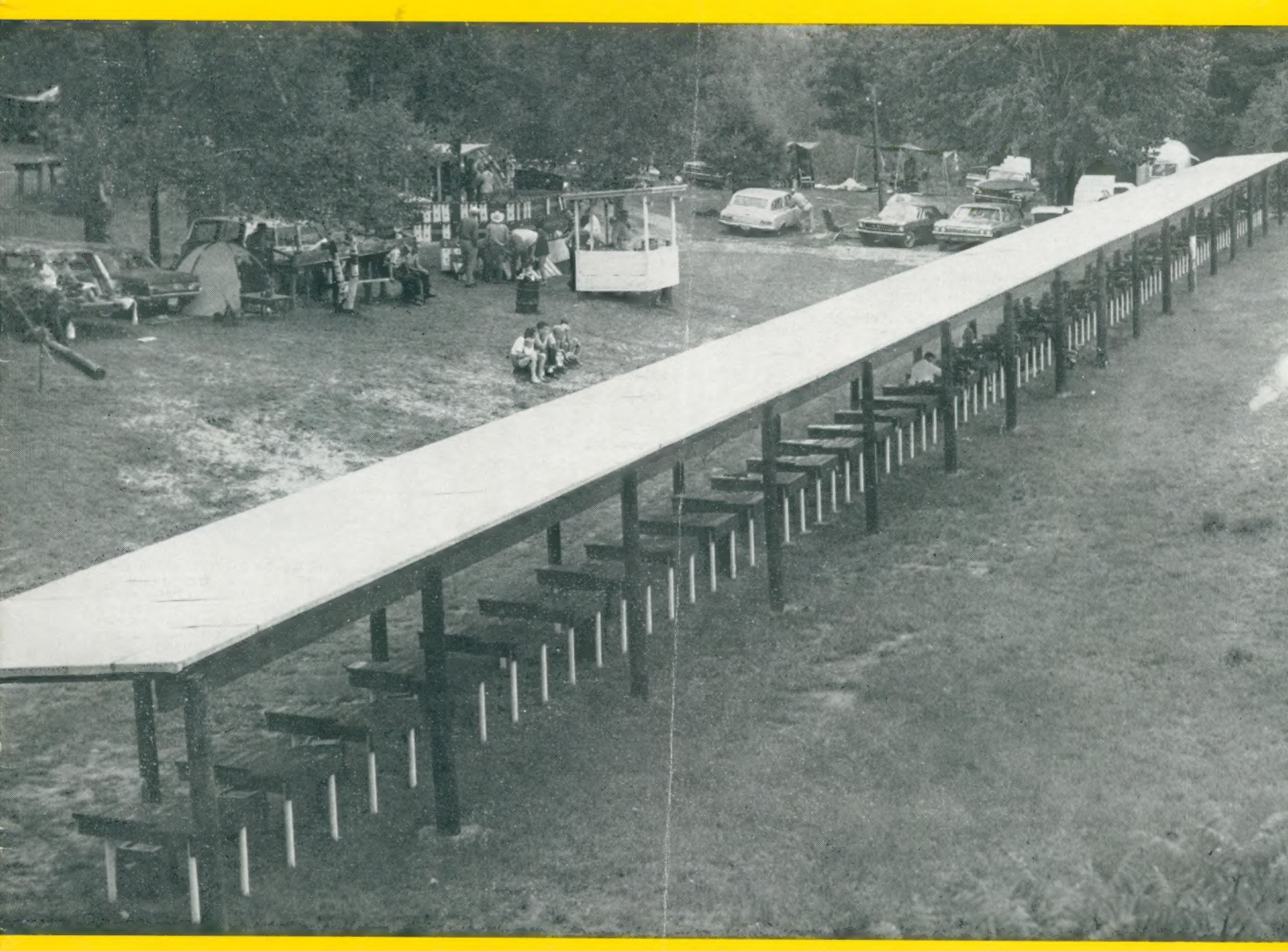
JULY 1968
Vol. 13 No. 3
Fifty Cents

Precision

SHOOTING

When Guns are Outlawed---Only OUTLAWS Will Have GUNS



a magazine for shooters by shooters

In This Issue:

1. RANDOM SHOTS — Betty S. Duncan
2. THE RIFLEMAN'S CORNER — Gary L. Anderson
3. PRESSURE FACTORS, PART II — Brownell and Associates
4. NRA PRESIDENT SPEAKS
5. THE EFFECTIVENESS OF CURRENT GUN LAWS — Charles Dickey

BENCH REST *Shooting Primer*

Should one be inquisitive about the sport of Bench Rest Shooting, but doesn't know how to start, he should read these instructions: 1. Obtain an Official Rule Book from NBRSA Headquarters, Mrs. Bernice E. McMullen, 607 West Line St., Minerva, Ohio 44657. 2. At the same time, send her $8.00 for one year's membership. Anyone will save money by doing this, if he attends more than three registered matches a year. 3. From this Rule Book, a shooter will be able to choose the class of Bench Rest Shooting he prefers. 4. Pages two, three and eighteen describe the rifles and their limitations.

The act of Bench Rest Shooting consists of sitting at a bench with a rifle resting on sand bags. The object of this position is to eliminate, as much as possible, the errors encountered in the process of holding and firing a rifle. Bench Rest Shooting is a **sport,** competitive or individual. The personal satisfaction gained in the ability to place one bullet on top of another, thus making a one hole group at 100 Yards and often at 200 Yards, has captivated an enthusiastic interest of many shooters for this kind of sport. It is particularly suited to both men and women who are not interested in indulging in the more vigorous or active sports. Therefore many Bench Rest Shooters are of the older set. This does not mean, however, that it does not present a challenge to the younger shooter; it will engage and tax his capabilities as well.

The current popularity of this kind of shooting was generated by the organization of The National Bench Rest Shooters Association in the years 1949 and 1950. At that time a competitive program was introduced and has since been expanded.

Once an individual has selected the most appealing Bench Rest Class, **it is very important that he attends some of the Matches.** Here he will learn much by asking questions, observing the equipment and methods used for loading and shooting. Any Bench Rest Shooter is more than anxious to help a newcomer.

The equipment needed to participate is available, for the most part, from PRECISION SHOOTING advertisers. It includes rifles, telescopes, rests, sand bags, loading tools, bullets, cleaning materials, powder, primers, etc.

Lastly, if possible, get the advice of a person in the game before making purchases.

Should an individual or a club wish further information, write to Dr. A. H. Garcelon, President of the NBRSA, 133 State St., Augusta, Maine 04430; or M. H. Walker, R.D. #1, Mohawk, N. Y. 13407; or the Editor of PRECISION SHOOTING.

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President — MERLE H. WALKER

Vice-President — DERMOT C. REILLY

Treasurer — EMORY L. TOOLY

Clerk — FREDERIC G. MEHLMAN

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NBRSA membership for one year is $8.00. This includes a subscription to PRECISION SHOOTING for the membership term. NBRSA associate membership, no magazine, $3.50 a year. NBRSA Life Membership, $100.00. Club affiliation fee, $10 annually. Contact Bernice McMullen, Sec.-Treas., NBRSA, 607 West Line Street, Minerva, Ohio 44657.

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22-250 Remington	14"	.55"
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6 m/m International (6 m/m on 250 Sav. case)	12"	.60"
6 m/m Remington (244 chamber)	10" or 12"	.60"
243 Win.	10"	.70"
6.5 m/m Rem. Mag.	9"	.70"
7 m/m Remington Magnum	9"	.75"
7.62 m/m Nato (308 Win.)	10", 12" or 14"	.75"
30-06	10"	1.00"
30-338 (30 7 m/m Mag.)	10"	1.00"
300 Win. Mag.	10"	1.00"

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NBRSA

1968 Match Schedule

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MAyfair 2-1711

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GULF COAST REGION
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MID-CONTINENT REGION
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Phones:
Area Code 501, 623-1812
or
Area Code 501, 623-5908

MISSISSIPPI VALLEY REGION
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St. Louis, Missouri 63147
Area Code 314, 388-2718

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Concord, Calif. 94520

Secretary-Treasurer

Bernice E. McMullen
607 West Line Street
Minerva, Ohio 44657
Area Code 216, 868-6132

EASTERN REGION

AUGUSTA, OHIO — Apr. 20, 21 Open and H.V.; May 11, 12 Open and H.V.; July 20 (night) Open and H.V.; **Aug. 27-30 Open National Championship;** Sept. 21 (night) Open and H.V. Reeds Run Rifle Range, Marie Brown, Box 66, Augusta, Ohio 44607.

EASTON, OHIO — Oct. 5, 6 300 Meter Open and H.V. Chippewa Rifle Club, Nelson Berger, Marshallville, Ohio 44645.

FASSETT, PENNA. — June 22, 23 All Varmint; July 13, 14 All Varmint; **Aug. 16, 17, 18 All Varmint—Eastern Region Championship.** South Creek Rod & Gun Club, Gerald Arnold, 107 South Kenyon St., Elmira, N. Y. 14904.

GREENVILLE, MICHIGAN — June 8 Open and H.V.; **July 6, 7 Open Eastern Region Championships;** Sept. 7, 8 Open and H.V. Flat River Conservation Club, Roger L. Powers, 509 Van Deinse Ave., Greenville Mich. 48838.

JOHNSTOWN, N. Y. — June 15, 16 Open and H.V.; **Sept. 14, 15 All Varmint, N. Y. State Championship.** Sec'y Pine Tree Rifle Club, Johnstown, N. Y. 12095.

WAPWALLOPEN, PENNA. — June 1, 2 Open and H.V.; Sept. 28, 29 Open and H.V. Council Cup Rifle Range, Robert W. Hart, 332 Montgomery St., Nescopeck, Pa. 18635.

GULF COAST REGION

GRAND PRAIRIE, TEX. — May 11 Bench Rest, Combined G.C. Region & TBRSA Championship; May 12 Light Varmint Region Championship; July 5 Light Varmint Speer Matches; July 6 Heavy Varmint Speer Matches; July 7 Bench Rest Speer Matches; **Oct. 12 Sporter, G.C. Region Championship; Oct. 13 Heavy Varmint, Combined G.C. Region and Grand Prairie Championship.** Ed Shilen, 4510 Harrington Road, Irving, Texas 75060.

MIDLAND, TEX. — June 15 L.V., TBRSA Championship; June 16 H.V., TBRSA Championship; August 17 Sporter, TBRSA Championship; Aug. 18 Hunter, TBRSA Championship (TBRSA Rules).

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MONTHLY CLUB SHOOTS

LTV ELECTROSYSTEMS GUN CLUB — Contact Jim Ridings, 606 Turtle Creek, Greenville Tex. 75401.

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PERMIAN BASIN RIFLE AND PISTOL CLUB—Contact Tom Abernathy, P.O. Box 459, Midland, Tex. 79701.

ROCKDALE GUN CLUB—Contact Dalton R. F. Harbers, P.O. Box 267, Lexington, Tex. 78947.

CANYON GUN CLUB — Contact Gene Bowlin, 404 29th St., Snyder, Tex. 79549.

MID-CONTINENT REGION

KANSAS CITY, KANSAS — June 8 Open and H.V.; **Oct. 5 Open and H.V. Mid-Continent Region Championship.**

TULSA, OKLAHOMA — May 19 All Classes; June 22 (night) All Classes; July 14 All Classes; **July 30 - Aug. 2 National Varmint Championship.**

WICHITA, KANSAS — Apr. 27 All Classes (3 P.M.); **Aug. 17 All Classes, Kansas State Championship;** Oct. 26 All Classes (3 P.M.).

For further information contact David B. Whittington, 462 W. Grand Ave., Hot Springs, Arkansas 71901. Phone 501-NA3-1812 or 501-NA3-5908.

MISSISSIPPI VALLEY REGION

ST. LOUIS, MISSOURI — Apr. 20, 21 Open and L.V. and Sporter; May 18, 19 All Varmint; June 8, 9 Open and All Varmint; Aug. 10, 11 Open and L.V.; Sept. 15 H.V. Bench Rifle Club of St. Louis, Arthur J. Freund, 1038 Hornsby Ave., St. Louis, Mo. 63147. Phone 314-EV8-2718.

NORTH CENTRAL REGION

IOWA FALLS, IOWA — May 25 H.V. (night); May 26 Sporter (9 A.M.); June 22 Sporter (night); June 23 H.V. (9 A.M.); July 20 H.V. (night); July 21 Sporter (9 A.M.); Aug. 17 Sporter (night); Aug. 18 H.V. (9 A.M.); Sept. 21 H.V. (Night); Sept. 22 Sporter (9 A.M.). Lee R. Boddy, Iowa Falls Gun Club, Iowa Falls, Iowa 50126. Phone 515-648-2865.

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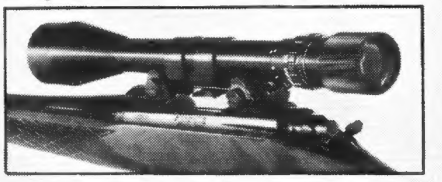

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Editorial

Non-Violence Begins At Home---On The TV

The impressive citizens' commission that President Lyndon B. Johnson has appointed to search out the causes of violence has our heartfelt support. As an organization of a million sportsmen dedicated to the safe and sane use of firearms for pastime, the National Rifle Association laments every misuse of guns more than most. It also knows that guns play a minor part in the current tidal wave of violence.

The commission will find that murder continues to increase in metropolitan areas that have placed severe restrictions on firearms and that, even so, gun killings are only about half what they were 30 or 40 years ago in relation to our population size.

Perhaps the most significant point is that while violence has taken a startling upswing, there probably are fewer firearms per capita in the U.S. now than in much of the 2-gun frontier past. Obviously, then, something other than guns, which have been with us all along, must be responsible.

To be blunt, we believe that the commission in its search need look no farther than the nearest television screen. TV is not wholly to blame, of course, but its 2 largest networks in particular have worked up a national frenzy.

Never before in the long history of mankind has the human mind been subjected to the explosive effect of so much violence, viciousness and depravity before its eyes. Never before have the goriest crimes been projected into the American home in gruesome detail as news, and then warmed over to regale as "entertainment" in fiction form.

"In Cold Blood" could be the slogan of much of the television industry. Its effect as a blatant stimulant to law-breaking is suggested in 2 sentences from authoritative sources:

1. Youngsters in the 12-17 age group spend 18 to 20 hours a week watching television, according to the Neilson Television Index.

2. Approximately the same age group, 11-17, in 1965 committed 61% of all U.S. car thefts, nearly half of the Nation's burglaries and larcenies, 28% of robberies, almost 20% of rapes, and — despite their youth — 8.4% of willful homicides, according to FBI statistics.

The older brothers and sisters of this group, aged 18-24, were found by the FBI to have committed more than a quarter of the Nation's homicides and nearly half of its rapes although they form only a tenth of the population. They presumably had spent more years in front of the television.

As this magazine pointed out editorially in February, some of the same networks that have smeared legitimate firearms ownership under the guise of protecting the public from guns have televised gunplay, gore and horror galore. This has not escaped notice. The 11-million-member Southern Baptist Convention, in advocating gun controls within constitutional limits, criticized "the glorification and exploitation of violence in television, movies, newspapers and fiction" as "an adverse influence . . . particularly on our youth." U.S. Sen. Ralph Yarborough (Texas), also blaming TV, said, "No generation of Americans has been taught murder like the present generation."

The British, whose rigid restraint on gun ownership has been held up by some TV commentators as an example for America, set a more appropriate example that might be applied to American television. British TV is a public utility under a non-political board of directors and with higher standards than in the U.S.

While Government operation of television clashes with our private enterprise concepts, the new commission on violence might well recommend that American television either exercise more self-control or be policed by the Federal Communications Commission, which apparently lacks authority to suggest toning down even the wildest programs.

Television also can complicate the already-acute problems of guarding public figures even without being oversensational. Dr. Roger Peel, psychiatrist at Washington's St. Elizabeth Hospital, where mentally-disturbed persons threatening the White House are sent, blames TV at least in part for a fivefold increase in the number of cases since LBJ took office. Projecting the President's image at people prone to have delusions, Dr. Peel explains, "makes the President more a part of their delusional system" — which is a nice medical way of saying that TV makes menaces out of crackpots.

Television has been vivid in keeping fresh the details of the JFK assassination and other murders. So have some other news media. James R. Hendrick, head of the White House Secret Service detail, was quoted: "All of this talk and publicity about assassinations has been bad." That was before Sen. Robert Kennedy's death.

Newspapers apparently helped to spark the assassinations of 2 slain Presidents, Lincoln and McKinley, and also the Robert Kennedy death. The suspect in the RFK murder carried with him a news clipping critical of his victim. John Wilkes Booth, who killed President Lincoln, was dejected and infuriated on reading reports of the downfall of the Confederacy. Leon Czolgosz, the crazed anarchist who murdered President McKinley, kept in his pocket and read nightly as his deadly inspiration a newspaper account of how another anarchist had assassinated King Humbert of Italy the previous year.

By refraining from sensationalism, the communications media can make an immediate contribution to national security and toward reducing violence. We hope that all, including some that seem to have gone berserk, will manage to do so.

The First Amendment is no more a license to arouse criminal passions than the Second Amendment is a permit to misuse firearms.

—Reprinted from **The American Rifleman,** 1968

About The Cover

The History of The Pine Tree Rifle Club, Inc.

The Pine Tree Rifle Club, Inc., of Johnstown, New York, was organized in the spring of 1937. At that time, the club leased enough land for a 100-yard rifle range and in the spring of 1938 enough more land for trap and skeet shooting. During the fall and winter of 1940, a club house was built on this leased land, which was purchased in 1941. This is now known as "the old club house."

As more members were added, activity increased; and in the summer of 1947, an area large enough for five benches was cleared by a bulldozer for a 100-yard range. This was the year of our first annual bench rest rifle match. It was held on Labor Day weekend with twenty-two contestants participating.

Beween 1947 and 1954, the range was changed twice to accommodate the ever-increasing number of bench rest shooters. In 1954, the range was equipped with thirty-five benches at 100 yards and thirty-five benches at 200 yards.

In the spring of 1951, construction started on a new club house; and by the summer of 1953, it was available for use during the bench rest matches of Labor Day weekend.

When it was arranged to have the second National Championship Matches at Johnstown in 1955, the range was changed for the fourth time to its present-day status, which is fifty benches for either 100-yard or 200-yard matches.

Many improvements have been made during the last few years, among which are a permanent cover over the fifty benches, purchase of more land, and additions to the club house.

A 28-target archery range covers the area; and in 1965, an automatic skeet and trap range was constructed at the rear of the old club house.

In 1967, an old building that had been used for storage and in bench rest matches was torn down, and a new modern 20-foot by 30-foot building was constructed. This building, which includes a garage in the cellar, will assist immensely in the operation of any rifle range activity.

Other improvements are planned for the future if the number of contestants in the bench rest rifle matches continues to increase.

The Pine Tree Rifle Club, Inc., now has a total of 325 members, with a gradual increase each year.

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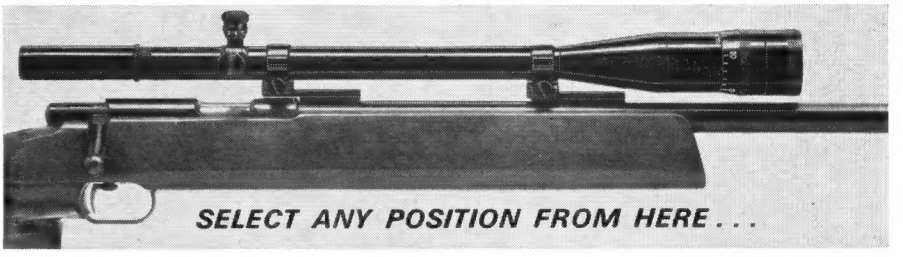

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Fired during the months of July, August, and September, 1968

ANY CENTER FIRE caliber SINGLE SHOT RIFLE as defined by the ASSRA Rules

Match	Range	Position	Sights	Shots	Target	For	Prizes
1	50 Yds	Bench	Any	5	Group	GROUP	3 medals
2	50 Yds	Bench	Any	10	50-yd 25-ring	SCORE	3 medals
3	100 Yds	Bench	Any	5	Group	GROUP	3 medals
4	100 Yds	Bench	Any	10	100-yd 25-ring	SCORE	3 medals
5	100 Yds	OFF-HAND	Any	10	100-yd 25-ring	SCORE	3 medals

.22 RIM FIRE caliber ONLY SINGLE SHOT RIFLE as defined by the ASSRA Rules

Match	Range	Position	Sights	Shots	Target	For	Prizes
6	50 Yds	Bench	Any	5	Group	GROUP	3 medals
7	50 Yds	Bench	Any	10	50-yd 25-ring	SCORE	3 medals
8	50 Yds	OFF-HAND	Any	10	50-yd 25-ring	SCORE	3 medals
9	100 Yds	Bench	Any	5	Group	GROUP	3 medals
10	100 Yds	Bench	Any	10	100-yd 25-ring	SCORE	3 medals

THE AMERICAN SINGLE SHOT RIFLE ASSOCIATION RULES will govern these matches EXCEPT .22 RIM FIRE BENCH REST SCORE MATCHES the edge of the bullet hole (per NRA) will be used in scoring. For these rule books write Dr. John P. May, Sec.-Treas., 13 East Prospect, Mount Prospect, Illinois 60056 for a copy — $1.00 members; $2.00 non-members. NO BOLT ACTIONS permitted even though they may be arranged for single loading only. NO gas check, half or full jacketed bullets are permissible. Cast, or swaged plain base lead or lead-alloy bullet only may be used. A CROSSBRACE (anti-cant) clamp up near the muzzle of the rifle is permissible, but nothing approaching a "machine rest" permitting the rifle to be "returned to battery." Any size sandbags are permissible.

ENTRY FEES — $1.00 per match to accompany your order for the matches you are entering. Send entries, Zip Code No., and make checks payable to: MONETT RIFLE CLUB, 509 Fifth Street, Monett, Mo. 65708. Practice targets .03½c each, postpaid. PLEASE ENTER NOW!

BE SURE TO FILL IN DATA called for on your targets (on one target only in each multiple target match will be sufficient) and have ONE or MORE WITNESSES SIGN THEM!

TO BE CONSIDERED (forms will close Oct. 10th) fired targets must be mailed via FIRST CLASS MAIL and show a postmark date of NOT LATER THAN midnight, September 30, 1968. You will receive a complete report of the results and any medal(s) due you promptly after the close of the matches. Therefore, send in fired targets even if bum score. Mail fired targets (in envelope provided) to:

MONETT RIFLE CLUB
509 Fifth Street
Monett, Mo. 65708
(Phone 417 235-7100)

PROGRAM

National Championship Varmint and Sporter Matches

TULSA BENCH REST RIFLE CLUB INC.
SKIATOOK, OKLAHOMA
July 30, 31 and August 1, 2, 1968
MATCH SCHEDULE

Sporter Class
Tuesday, July 30 — 8 A.M.
1 WmUp 5 Record shots at 100 Yds.
1 WmUp 5 Record shots at 200 Yds.

Light Varmint Class
Wednesday, July 31 — 8 A.M.
1 WmUp 5 Record shots at 100 Yds.
1 WmUp 5 Record shots at 200 Yds.

Heavy Varmint Class

Thursday, August 1 — 8 A.M.
1 WmUp 5 Record shots at 100 Yds.

Friday, August 2 — 8 A.M.
1 WmUp 5 Record shots at 200 Yds.

MONDAY, July 29. Range registration will be open from 2 P.M. to 6 P.M. Registration and drawing of benches from 7 A.M. to 7:30 on each of the following three mornings.
WEIGHTING OF GUNS: 7 A.M. to 7:45 each morning.
RANGE REGISTRATION FEES: $7.50 per day (Sporter and Light Varmint rifles) NBRSA member. There will be an additional $1.00 per day charge for non-members of NBRSA. $5.00 per day (Heavy Varmint rifles) NBRSA member. There will be an additional $1.00 per day charge for non-members of NBRSA.
Camping space, water, limited electricity . . . at range.
Information unavailable at this time concerning food at the range.

Joan Morgan, Sec'y
Route 1, Box 329
Seminole, Oklahoma 74868

Sporter & Heavy Varmint Match Results

May 25 & 26, 1968

IOWA FALLS RIFLE, PISTOL & TRAPSHOOTING CLUB, INC.
SPORTER RIFLES (4 Shooters)

100 Yd. Agg.		200 Yd. Agg.		Grand Agg.	
1. Gerald Wilkenson	.679	1. Gerald Wilkenson	.782	1. Wilkenson	.730
2. Jim Williams	.830	2. Jim Williams	.822	2. Williams	.826
3. Dick Saunders	1.052	3. Bob Johnson	1.102	3. Johnson	1.034

HEAVY VARMINT (8 Shooters)

E. Cabor, Howard Nesheim and Al Carpenter were first match shooters and did real well.

100 Yd. Agg.		200 Yd. Agg.		Grand Agg.	
1. Howard Nesheim	.617	1. Ed Cabor	.505	1. Wilkenson	.640
2. Gerald Wilkenson	.637	2. Wilkenson	.644	2. Carpenter	.831
3. Al Carpenter	.699	3. Carpenter	.963	3. Saunders	.869

Richard J. Saunders
145 Delhi Road
Manchester, Iowa

Olympic Preliminary Tryout at Murraysville Rifle Club

By W. R. FUNK
3336 Sardes Rd.
Murrysville, Pa. 15668

This is the bulletin for our recent Olympic Preliminary with the smallbore rifle at 50 meters.

The first two places went to Canadians Gerry Ouellette and Alf Mayer, medal winners at last summer's Pan-Am Games.

Mike Eddy is one of Western Pennsylvania's top competitors in gallery and outdoor position shooting.

T. Y. Wu is a long time International shooter who has represented Nationalist China at Olympic and Asian Games competition.

Diana Timberlake shoots with the Acorns Junior Team in theWashington, D.C. area.

Jack and William Schweitzer shoot with the Lancaster Optimists Junior Rifle Club which has done well in national competition.

Weather for both days of the match was rainy proving the worth of covered and protected firing points and that accuracy and rain are not incompatible (check top prone scores).

Final selections for the team will be made in San Antonio the first two weeks of July and the games in Mexico City this fall.

The weather was about the same for both days of the match; every relay got to shoot in the rain at one time or another.

Scores are being sent to the NRA. Good luck to those going to San Antonio!

There are two more matches scheduled for this season — June 29-30, and Sept. 21-22; hope you can make it.

Our thanks to a fine group of competitors.

Top 10% in each position:

Prone

1.	D. Nancarrow	397-20
2.	William Schweitzer	397-6
3.	G. Ouellette	396-11
4.	Diana Timberlake	395-20
5.	J. Schweitzer	395-14
6.	W. Karl	392-15
7.	L. Wilkens	391-11
8.	A. Mayer	391-10

Kneel

1.	G. Ouellette	387-5
2.	Diana Timberlake	386-9
3.	A. Mayer	386-6
4.	G. Seymour	379-7
5.	M. Eddy	379-5
6.	R. K. Moore	379-4
7.	C. Massey	377-2
8.	J. Schweitzer	376-4

Stand

1.	G. Ouellette	372-3
2.	M. Eddy	371-8
3.	A. Mayer	368-3
4.	T. Y. Wu	364-1
5.	C. Massey	353-3
6.	D. Kondor	348-1
7.	Deborah Capen	342-2
8.	G. Seymour	340-2

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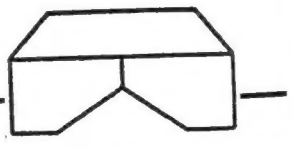

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Reed's Run Rifle Range

April 20th and 21st

On **April 20th and 21st** the 1968 season of bench rest and heavy varmint shooting in the Eastern Region got off to a fine start with 42 shooters participating, 19 in bench rest, 21 in heavy varmint, and 2 in both classes.

After what seems to be a long winter we always look forward to the first shoot in the spring, seeing our old shooting friends and of course greeting the newcomers.

We were very fortunate this time of year to have two beautiful days, although there are always some little tricky winds and mirage as a challenge to the shooters, just a little something to get them talking to themselves.

The following are the aggregate winners:

HEAVY VARMINT

5-Shot Agg. at 100 yds.

1. John Gallimore, East Liverpool, Ohio ..... .3286
2. George Kelbly, Rittman, Ohio ..... .3346
3. Ted Corder, Fairmont, West Virginia ..... .3362
   Last Place ..... .8816

5-Shot Agg. at 200 yds.

1. William Dunn, Geneseo, New York ..... .4995
2. Dave Hall, Warsaw, New York ..... .5375
3. R. G. Casper, New Philadelphia, Ohio ..... .5418
   Last Place 1.0724

Grand Aggregate

1. George Kelbly ..... .4568
2. Ted Corder ..... .4769
3. William Dunn ..... .4807
   Last Place ..... .9770

BENCH REST

5-Shot Agg. at 100 yds.

1. Andy Fazio, Wood Haven, New York ..... .2952
2. Kenneth Gilbert, Parkersburg, West Virginia ..... .2956
3. Jane Pickens, East Liverpool, Ohio ..... .2988
   Last Place ..... .6146

5-Shot Agg. at 200 yds.

1. Herbert Stark, Bridgeport, West Virginia ..... .4424
2. Robert Simonson, Kalamazoo, Michigan ..... .4433
3. "Cowboy" Rucker, Akron, Ohio ..... .4714
   Last Place ..... .8709

5-Shot Grand Aggregate

1. Herbert Stark ..... .4059
2. "Cowboy" Rucker ..... .4087
3. Robert Simonson ..... .4184
   Last Place ..... .6536

10-Shot Agg. at 100 yds.

1. Jane Pickens ..... .4336
2. John Lyon, Bridgeport, West Virginia ..... .4348
3. Warner Henry, Greenville, Michigan ..... .4402
   Last Place ..... .7596

10-Shot Agg. at 200 yds.

1. Herbert Stark ..... .4744
2. "Cowboy" Rucker ..... .5927
3. Robert Simonson ..... .6352
   Last Place 1.0976

10-Shot Grand Aggregate

1. Herbert Stark ..... .4848
2. "Cowboy" Rucker ..... .5352
3. Robert Simonson ..... .5500
   Last Place ..... .7831

May 11th and 12th

As our second registered bench rest and heavy varmint match **May 11th and 12th** was Mother's Day weekend we only had 17 shooters participating, 8 bench rest, 7 heavy varmint, and 2 in both classes. Must watch the dates of those special days from now on.

Then as a little more punishment it rained steadily all day on Saturday and into the night. It let up on Sunday but everything was well waterlogged.

Ernest Scafuri didn't mind the weather; he just aimed through the rain drops and was first in 3 of 5 matches and the aggregate in the 5-shot matches, 4 of 5 matches and the aggregate in the 10-shot matches at 100 yards. Was second in the 5 and 10-shot aggregates at 200 yards, and first in the 5 and 10-shot grands.

"Cowboy" Rucker wasn't to be counted out altogether, as he was first in the 5 and 10-shot aggregates at 200 yards.

In the heavy varmint class George Kelbly wasn't bothered too much with the rain either as he was first in 4 and second in 1; Dave Hall was close behind with first in 2 and second in 3 of the 6 aggregates. George won the 100 yd and grand aggregate trophies, and Dave the 200 yd one.

HEAVY VARMINT

5-Shot Agg. at 100 yds. A.M.

1. George Kelbly, Rittman, Ohio ..... .3224
2. Dave Hall, Warsaw, New York ..... .4096
   Last Place ..... .6048

5-Shot Agg. at 200 yds. A.M.

1. George Kelbly ..... .5319
2. Dave Hall ..... .5572
   Last Place ..... .8924

Varmint Grand Aggregate A.M.

1. George Kelbly ..... .4271
2. Dave Hall ..... .4834

5-Shot Agg. at 100 yds. P.M.

1. George Kelbly ..... .3692
2. David Hamstead, Clarksburg, West Virginia ..... .3738
   Last Place ..... .8274

5-Shot Agg. at 200 yds. P.M.

1. Dave Hall ..... .5064
2. Richard Hall, Warsaw, New York ..... .5539
   Last Place 1.3788

Varmint Grand Aggregate P.M.

1. Dave Hall ..... .4755
2. George Kelbly ..... .5035
   Last Place 1.1031

BENCH REST

5-Shot Agg. at 100 yds.

1.	Ernest Scafuri, Detroit, Michigan	.3032
2.	Lowell Shelt, North Lawrence, Ohio	.3082
	Last Place	.7194

5-Shot Agg. at 200 yds.

1.	"Cowboy" Rucker, Akron, Ohio	.3686
2.	Ernest Scafuri	.3725
	Last Place	.7283

5-Shot Grand Aggregate

1.	Ernest Scafuri	.3378
2.	Herbert Stark, Bridgeport, West Virginia	.3691
	Last Place	.5182

10-Shot Agg. at 100 yds.

1.	Ernest Scafuri	.3272
2.	Robert Hart, Nescopeck, Pennsylvania	.4362
	Last Place	.6638

10-Shot Agg. at 200 yds.

1.	"Cowboy" Rucker	.5256
2.	Ernest Scafuri	.5430
	Last Place	.8530

Bench Rest Grand Aggregate

1.	Ernest Scafuri	.4351
2.	Herbert Stark	.4906
	Last Place	.6472

Wapwallopen, Pa.
June 1 & 2

The Open and Heavy Varmint Matches at the Council Cup Rifle Range were an experience of weather (wet), good comradeship, excellent facilities, and very stiff competition.

The two-day matches attracted one of the largest aggregations of bench rest shooters since the mid 1950's. A total of 137 rifles were on the line. Six relays were needed, for the 25 bench firing point, to complete the matches.

Bob, Wallace Hart and their target and scoring teams did a remarkable job. Their new scoring device, in particular, helped speed up placing the **perforated pictures** on the **wailing wall.**

Your P.S. editor enjoyed himself thoroughly, loading and shooting two rifles. — **Ask no more.** Following is a condensed report.

LaFayette

HEAVY BENCH

45 competitors — 43 finished

100 Yds.

		Cal.	100 Yd. Agg.
1.	I.E. Potter	308	.3766
2.	E. Stolle	22SV	.3946
3.	G. McMullen	23-40	.4178
4.	J. Minico	308	.4216
5.	R. Stolle	308	.4278
6.	J. Scrimgeour	308	.4342
7.	J. Kohler	308	.4546
8.	K. Gilbert	222 ½	.4634
9.	R. Stolle, Jr.	22-45	.4638
10.	R. Hanes		.4658
43.	Last Eligible		1.0976

HEAVY VARMINT

92 competed — 89 finished

100 Yd. Top 10

		Cal.	Agg.
1.	John Hart	222	.2948
2.	Homer Culver	22 Culver	.3152
3.	Eldon Stolle	22 Goode	.3168
4.	Omar Reinhart	219 Wasp	.3408
5.	Arnold Banker	222	.3470
6.	D. Hamstead	——	.3530
7.	S. Borsch	222 ½	.3576
8.	J. Arnold	222	.3784
9.	T. Corder	22	.3856
10.	J. Kohler	308	.3868
89.	Last Eligible	243	1.1382

HEAVY BENCH

42 competed — 37 finished

200 Yds.

		Cal.	200YD Agg.
1.	G. Stannard	308	.4066
2.	I. Potter	308	.4180
3.	C. Yockey	222 ½	.4434
4.	R. Stolle	308	.4539
5.	E. Stolle	22SV	.4818
6.	R. Hanes	308	.4890
7.	L. Rucker	308	.5066
8.	T. Manganello	222 ½	.5144
9.	W. Purcell	308	.5199
10.	C. Kingsley	308	.5309
37.	Last Eligible	6mm	1.1278

HEAVY VARMINT

88 competed — 68 finished

200 Yd. Top 10

		Cal.	Agg.
1.	A. Blensinger	222	.3628
2.	J. Dewey	222	.3697
3.	B. Cork	222	.3865
4.	J. Hart	222	.4017
5.	C. Griffith	222	.4051
6.	B. Lockhart	222	.4073
7.	S. Borsch	222 ½	.4244
8.	B. Baker	222	.4247
9.	A. Banker	222	.4248
10.	P. Kempfer	22JV	.4300
68.	Last Eligible	243	1.1805

HEAVY BENCH TOP TEN

34 completed

		Grand Agg. 100-200 Yd.
1.	I. E. Potter	.3973
2.	E. Stolle	.4382
3.	R. Stolle	.4539
4.	G. Stannard	.4760
5.	R. Hanes	.4774
6.	J. Minico	.4832
7.	I. Rucker	.4918
8.	K. Gilbert	.5069
9.	G. McMullen	.5070
10.	G. Scrimgeour	.5151
34.	Last Eligible	1.0178

HEAVY VARMINT

66 completed

		Grand Agg. 100-200 Yd.
1.	John Hart	.3482
2.	Homer Culver	.3612
3.	A. Blensinger	.3795
4.	A. Banker	.3859
5.	S. Borsch	.3910
6.	O. Reinhart	.4091
7.	E. Stolle	.4103
8.	B. Cork	.4150
9.	D. Hamstead	.4188
10.	G. Stannard	.4212
66.	Last Eligible	1.1593

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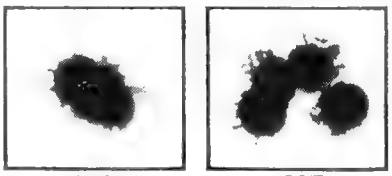

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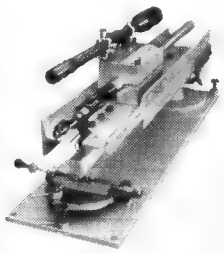

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New Record

The measurement committee announces a new world's record for five shots at 200 yards in the Light Varmint class.

The target was fired by Mr. John H. Bunch at the Gulf Coast Regional Light Varmint Rifle Championship Matches sponsored by the Grand Prairie Gun Club, Grand Prairie, Texas on May 12, 1968.

It measures 0.303", a scant .001" under the present record of 0.304" set by Mr. Hanson on September 4, 1966.

John's target was examined independently by Messrs. Clyde Hart, Mike Walker and Bill Kappel — all official Eastern Region members of the committee.

Bunch "bunched" his holes with the following: Rifle weight 10 lbs. 4 oz., Colt-Sako action, Day barrel 1-14 twist 20" long, Sierra 53 gr. bullets, Rem 6½ primer, 26.7 grains Ball C-1, GI brass in 22 B.B. caliber, wood and metal work by Bunch, eye assistant was a Unertl 20X.

A. H. ANGERMAN
Chairman
Measurement Committee

News Release

What game species are legal in what states? How abundant are our game populations? Where are the best hunting areas? What is the season and what are the limits?

Answers to these and other questions can be found in the new "1968-69 Hunting Compendium and Regional Report" being made available to sports editors and their readers throughout the country by the Winchester-Western Division of Olin Mathieson Chemical Corporation.

The Compendium is highly illustrated and has 62 pages of valuable hunting information. It includes a 50-state survey compiled by Olin's Conservation Department with the cooperation of state fish and game departments. The annual survey is supervised by the company's Dr. Edward L. Kozicky, director of conservation, and John B. Madson, assistant director.

Regional reports by well known outdoor writers also are part of the Compendium: Pete Czura for Mid-America, John Gartner for the West, Grits Gresham for the South and Pete Kuhlhoff for the Northeast.

Copies of the new "1968-69 Hunting Compendium and Regional Report" are available to the public for 25 cents to cover postage and handling. Requests should be directed to the Winchester News Bureau, 460 Park Avenue, New York, N. Y. 10022. Bulk prices available on request.

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BENCHREST RIFLE CLUB OF ST. LOUIS
April 21, 1968

We had a poor turnout for our first Light Varmint and Sporter Matches here at the St. Louis benchrest club. Four shooters in each class — seems there isn't much interest in these classes here.

Art Freund set two new range records in winning the sporter match, the 100 yd aggregate with .3248 and the grand aggregate with .4234. You will notice from the score sheets which I am enclosing with this letter that the two shooters who managed to finish the sporter match both had better scores than any in the light varmint class although conditions were the same in both matches.

I am sorry to be so late with the results of our matches, but hope to get them all in now on time so that you may get them in **Precision Shooting.**

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Light Varmint

	100 Yd.								200 Yd.							Gr. Agg.	
	W.U.	1	2	3	4	5	Agg. Score	Pl.	W.U.	1	2	3	4	5	Agg. Score	M.O.A. Score	Pl.
W. Espy	.491	.594	**.196**	.827	.274	.462	.4706	1	1.481	1.117	1.544	1.259	.835	1.655	.6410	.5558	1
D. Quevreaux	.346	.471	.525	.523	.623	.553	.5408	2	.738	1.531	1.294	1.152	1.899	1.458	.7334	.6371	2
A. Freund	.582	.813	.386	.358	.742	.959	.6516	3	**.711**	2.230	1.238	1.075	1.224	1.081	.6848	.6682	3
J. Bales	.946	.566	.758	.911	.959	.942	.8272	4	1.558	1.685	2.311	1.536	1.975	2.046	.9553	.8912	4
Sporter																	
A. Freund	DNF	.472	**.235**	.335	.275	.307	.3248*	1	DNF	.976	1.237	.902	1.129	.976	.522	.4234*	1
A. Broderick	DNF	.384	.504	.284	.922	.359	.4906	2	1.126	.996	1.056	**.724**	1.387	1.178	.5341	.5123	2

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POWDER VALLEY RIFLE RANGE
RD No. 1
MINERAL CITY, OHIO

Heavy Varmint Rifle Match Report For Shoot
No. 5 (June 1st, 1968)

Ten shooters took the line in this, our fifth shoot of the year, and as could be expected, it rained before the shoot was over. We eventually are going to pick a day that it doesn't rain. Ed Frazer, of Akron, really had that .308 of his shooting. He placed first with a 250 and 19X; E. E. Triplett, of Cuyahoga Falls, was second with a 250-18, and a new shooter with a new Rem. 40X shooting his first competition was third. Congratulations to all three, and especially to the new man, Robert Sciarini of New Philadelphia.

Here are the results in more detail:

1.	250-19 Ed Frazer ($2.50)	.308 Hart, Hart bbl., 25X Lyman
2.	250-18 E. E. Triplett ($1.50)	.222 Rem., Hart bbl., Lyman 25X
3.	250-14 Robert Sciarini ($1.00)	.222 Rem. 40X, Lyman 25X
4.	249-16 William Lafferty	.222 Rem., Hart bbl., Lyman 25X
5.	249-15 R. Brogne	.222 Rem. 40X, Lyman 25X
6.	248-18 L. Mangon	.222 Rem., Hart bbl., Lyman 25X
7.	248-16 R. Casper	.222½ Rem., Hart bbl., Lyman 20X
8.	245-11 Jim Young	.222 Rem., Hart bbl., Lyman 25X
9.	244-8 Charles Keehn	.222-722, Hart bbl., Lyman 20X
10.	234-5 Frank Oldt	.222 Sako, Lyman 20X

These targets were measured for Minute of Angle, and Ed Frazer also had the best in that category. His M.O.A. was .4817 which was very good for the conditions.

For more information, contact R. G. Casper, 1000-4th St. N.W., New Philadelphia, Ohio 44663; Tel 343-0535.

POWDER VALLEY RIFLE RANGE
RD No. 1
MINERAL CITY, OHIO

Heavy Varmint Rifle Match For Shoot
No. 6 (June 7, 1968)

This was our first night match of the season, fired under the lights, and conditions were excellent. The few of us that lost points were hard put to find an excuse. Charles Griffith of Canton really had that Mauser of his shooting; his 250-22 took first place, with Gary Dichler, of Port Washington right behind with a 250-21, and Al Creighton of Waynesburg was third with a 250-20.

Here are the results in more detail:

1.	250-22 Charles Griffith ($3.50)	.222 Mauser, Lyman 25X
2.	250-21 Gary Dichler ($2.10)	.222½ Rem., Hart bbl., Lyman 20X
3.	250-20 Al Creighton ($1.40)	.222 Shilen, Lyman 25X
4.	250-16 Robert Sciarini	.222 Rem., Rem. bbl., Lyman 25X
5.	249-19 E. E. Triplett	.222 Rem., Hart bbl., Lyman 20X
6.	249-19 R. Casper	.222½ Rem., Hart bbl., Lyman 20X
7.	249-17 William Lafferty	.222 Rem., Hart bbl., Lyman 25X
8.	249-15 Ralph Brogne	.222 Rem., Lyman 25X
9.	248-16 Charles Keehn	.222-722, Hart bbl., Lyman 20X
10.	248-14 Floyd Growell	.222 Rem., Rem. bbl., Lyman 25X
	244-9 Last Place	.222 Sako, Lyman 20X

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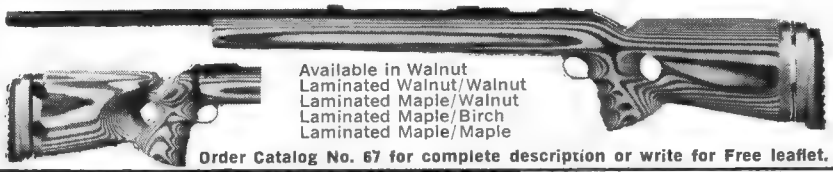

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3. E. E. Castleberry	.7139
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1. Red Cornelison	.6765
2. H. Powers	.8524
3. Charles Long	.8597
Last Place	.9751

Rifle Statistics

1 — 222 Mag.	2 — 6mm.
3 — 225S	7 — 222½
1 — 23-40	14 — 222
1 — 224	1 — Not known

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Pressure Factors

IN CENTER FIRE RIFLES

PART II

II — Bullet Weight

By

LLOYD BROWNELL
Professor, Departments of Chemical and Nuclear Engineering
The University of Michigan

WARREN PHILLIPS
Graduate Student in Mechanical Engineering
The University of Michigan

and

THOMAS BLACKWOOD
Graduate Student in Chemical Engineering
The University of Michigan

This and following articles will each consider in some detail one of the variables influencing maximum chamber pressure in center-fire rifles. This limitation to one variable helps to simplify relations and enables us to pick a complex jig-saw pattern apart piece by piece. Later we can put the pieces together again so that the influence on pressure of a number of simultaneous changes (bullet weight, powder type, powder load, case volume, etc.) can be anticipated. In this second article we will look at the influence of bullet weight on pressure.

Handloaders frequently test new bullets in their search for the best combination of components. This may be a search for the greatest accuracy in precision shooting, or for the best performance in the field on game. But, whether it is for the sake of accuracy, field performance, or safety, the handloader should be aware of the influence of bullet weight on maximum chamber pressure.

Holding All But One Variable Constant

How does one determine the influence of bullet weight on the maximum chamber pressure? One method is to set up the test conditions so that any changes observed in the maximum pressure can only be caused by changes in bullet weight. Thus all other factors that could have a possible influence on pressure must be held constant. Therefore, for example, to avoid the influence of different burning rates of the various powders we will stick to one powder, Dupont's IMR No. 3031. This powder is selected because it is one of the most flexible of the powders being used for center-fire cartridges, from .22 cal to 30-06, and on up to the .458 Winchester. Also, since it has been on the market for over thirty years a great amount of information is available about its characteristics. There are other variables which must remain constant also. Thus we must select a type of cartridge, case manufacturer, primer type and manufacturer, bullet type and manufacturer, rifle barrel twist and rifling type, freebore, bullet seating depth, barrel length (for Velocity effects), and firing temperature.

Table I shows the selections of variables held constant in the series of tests at the University of Michigan in which the maximum chamber pressure was measured and the bullet weight was varied.

Table I
Selected Conditions Held Constant

Cartridge	30-06
Case Mfgr.	Remington
Primer	Large rifle, Remington No. 9 1/2
Bullet Type	220 gr. Remington SPCL (cut)
Rifling Twist	1 turn in 10"
Rifling Grooves	4 groove 03A3 (new military)
Freebore	1 bore diameter
Seating depth	5/16" (to cannelure)
Barrel length	24" nominal #C
Rifle	1903A3 Springfield
Powder	IMR No. 3031 (Lot 1229)

The reasons for these choices are as follows. The 30-06 Springfield was selected for economy in available surplus rifles, surplus new barrels and surplus military ammo. The 220 grain Remington SPCL (soft point core lokt) hunting bullet is the heaviest 30 caliber bullet at standard prices. The plan was to use a heavy bullet to permit cutting it to 200, 180, 150, 130 and 110 grain sizes for use in the tests. Thus weight is varied but the same jacket characteristics can be maintained. The commercial 110 grain bullets are usually intended for varmint loads and have thin jackets so as to disintegrate on impact, reducing the hazard of ricochet near inhabited areas. Compound bullets heavier than 220 grains were also made from the 220 grain Remington SPCL bullets as shown in Fig. 1.

Most jacketed bullets give their maximum accuracy at some particular pressure characteristic of the bullet and the barrel — ample to upset the bullet base and seal off the escaping powder gas, but not so great that the uniform contour of forward section is deformed. Excessive acceleration can actually give a "set back" to a pointed lead bullet resulting in a more rounded tip which may not be perfectly concen-

TABLE II
EXPERIMENTAL FIRING DATA FOR 30-06
SPRINGFIELD BARREL C

Bullet	110 gr Cut	130 gr Cut	150 gr Cut	200 gr Cut	220 gr Rem	348 gr Compound	476 gr Compound
L, gr			abs. press. 1000 psi				
20.0	---	---	6.0	11.0	---	---	---
23.0	---	7.0	11.0	13.2	---	---	---
25.0	---	9.0	---	15.4	---	---	---
26.0	---	---	11.0	---	---	---	27.0
27.0	---	11.0	---	17.0	19.2	25.0	---
28.0	---	---	13.0	---	---	---	---
29.0	---	---	13.5	---	24.0	29.0	35.5
30.0	---	12.0	---	20.0	---	34.0	---
32.0	---	---	---	23.2	---	---	47.0
33.0	10.5	13.0	19.0	---	---	---	---
34.0	---	---	---	27.5	---	---	---
35.0	---	---	---	---	30.0	53.5	61.0
36.0	14.0	17.4	21.0	29.7	---	---	---
37.0	---	---	---	---	35.0	56.0	71.0
38.0	---	22.5	---	36.3	37.5	---	---
39.0	---	---	29.0	---	41.0	64.0	83.0
40.0	21.5	26.0	31.0*	41.8	44.0*	68.0	86.0
41.0	---	---	33.0	45.0	47.0	74.0	91.0
42.0	26.0	31.0	36.5*	46.8*	52.0*	81.0	102.0
43.0	---	---	40.3*	50.6	57.5	---	---
44.0	32.0	37.0	44.0	58.5	64.0	---	---
45.0	36.0	43.0	50.0	65.0	---	---	---
46.0	40.0	48.0	55.0	---	---	---	---
48.0	48.0	57.0	63.5	---	93.1	---	---
49.0	51.0*	59.8*	67.8*	---	100.0	---	---
50.0	54.0	62.5	---	---	---	---	---
52.0	60.0	---	---	---	---	---	---

* Interpolated or Extrapolated

POWDER DUPONT IMR 3031, LOT 1229; BARREL "C", SPRINGFIELD 30-06, 03A3, 0.310" GROOVE DIAMETER AT BREECH (FOR 1/4"), BORE WEAR BY U.S. ORDNANCE BREECHBORE GAGE 0.10; SEATING DEPTH 9/16" (TO CANNELURE); PRIMERS AND CASES REMINGTON COMMERCIAL; BULLETS CUT FROM 220 GRAIN REMINGTON SPCL

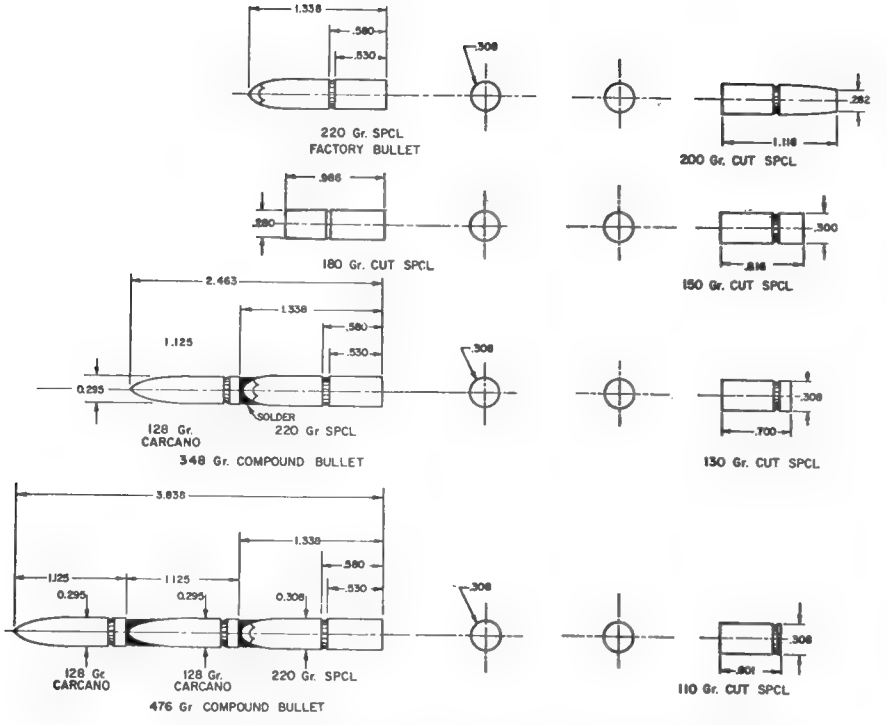


Fig. 1. Dimensions of Bullets of Various Mass's made from 220 gr. Rem. SPCL Bullet

tric. This is but one of the reasons why jacketed bullets usually give greater accuracy than lead bullets. Jacketed bullets also have a pressure limit above which accuracy starts to decrease which is another reason for study of pressure as a function of bullet weight.

Since we selected Dupont IMR No. 3031 powder and a Remington SPCL bullet, we used new Remington 30-06 cases and Remington No. 9 1/2 primers for the sake of consistency. The same powder type and load, with the same type bullet, and the same rifle usually gives about the same pressure and velocity, whether Winchester cases with Winchester 120 primers or Remington cases and Remington primers are used. But most handloaders are cautious about mixing primer and case manufacturer. A Winchester primer in a Remington case can give a slightly higher than typical pressure. This is because the case volume factor has an influence on chamber pressure which we will consider in a later article.

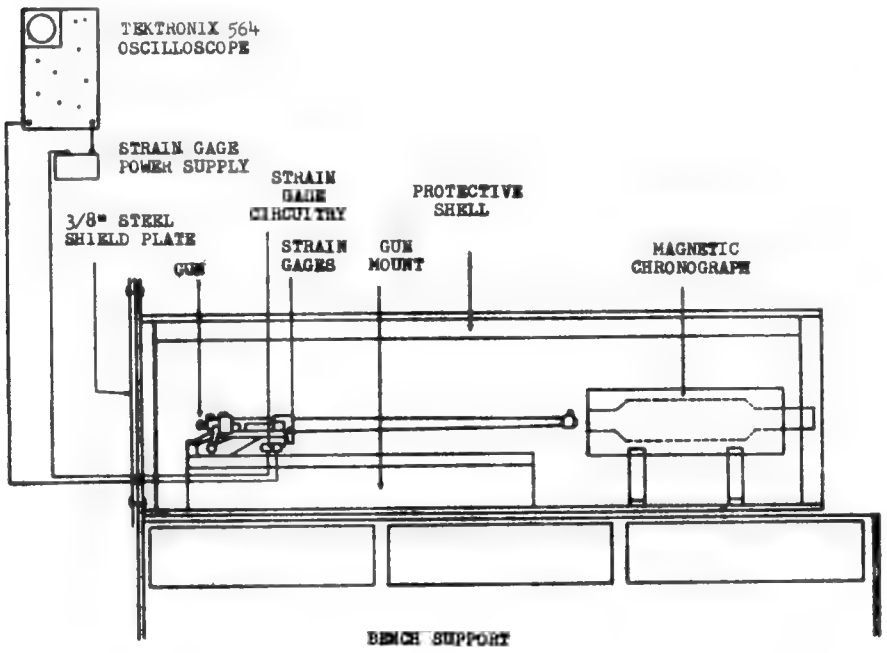


FIG. 2. SKETCH OF BALLISTIC APPARATUS

The special "cut" bullets shown in Fig. 1 were made from the 220-grain Remington SPCL bullets with weights varying from 110 to 476 grains, and were test-fired with selected loads of IMR No. 3031 powder. These bullets were cut in a lathe from the 220 grain Remington SPCL so that the lighter bullets would have the same Jacket Characteristic "J" as the 220 grain Remington SPCL. Since we are holding this factor constant, we can also postpone discussion of this factor for the present.

The apparatus used in the pressure measurements is shown in Fig. 2 and except for the magnetic chronograph, was the same as that described in Technical Report No. 1[1]. Pressure data were obtained in the form of oscilloscope displays with a 2 ms time sweep. The signal was the voltage rise and fall as described in the first article in this series.[2]

Test Barrel C — A "Free" Barrel

A new 03A3 Springfield four-groove 30-06 barrel, called Barrel C, was used in these tests. The very high pressures used in the early testing for calibration at high pressure actually gave the barrel a slight permanent set so that the groove diameter was 0.310" at the breech end of the bore rather than 0.308". This was determined with a lead slug which was forced into the breech end of the rifling for 1/4", removing with cleaning rod from the muzzle end, and then "miking" the slug removed. Also a US Ordnance breechbore gage inserted into the bore showed a bore wear of .0001. These facts are mentioned to explain that Barrel C was not a "tight" barrel and that the pressures (absolute in psi) listed in Table II are low — probably 30% lower than would be obtained with a new "tight" barrel. This means that there is a rifle barrel factor "R" which is a characteristic of every barrel, and which too will be discussed later. At this point, since we use only one barrel, "R" is kept constant.

Interpreting the Test Firing Results

The results of the test firing are listed in Table II. To discover the nature of the influence the bullet weight has on pressure we can look at Table II and select different bullet weights for a selected powder load which we will keep the same for each bullet weight. For example let us select 44.0 grains of powder for 110 cut, 130 cut, 150 cut, 200 cut, and 220 grain Remington SPCL bullets.

(Next page please)

Plotting the Data

From Table II we see that the pressures produced by the bullets as we go from 110 to 220 grains are 32,000, 37,000, 44,000, 58,000, and 64,000 psi absolute respectively. Now we take a piece of graph paper and on the vertical scale we will indicate absolute pressure psi, going from 0 to 100,000 psi. On the horizontal scale we will indicate bullet weight in grains from 0 to 350 grains. Now the data listed above can be plotted as points (the circles around the points are used to make the points more visible) as shown in Fig. 3. The influence of bullet weight on pressure must be 0 with a bullet weight of 0. Thus, in Fig. 3 we can draw a straight line through the five points and through zero.

Equations of Lines

The equation that describes such a straight line passing through zero is very simple. It is:

p equals a w

where, p equals absolute chamber pressure, psi; w equals bullet weight, grains; a equals a constant depending upon powder load and other selected factors listed in Table I.

To determine "a" we can substitute any of the known corresponding values of "p" and "w" such as 64,000 psi for 220 grain Remington SPCL bullet and 44.0 grains IMR 3031. This gives:

64,000 psi equals (a) (220 gr)

or,

a equals 64,000 psi/220 gr equals 291 psi/gr

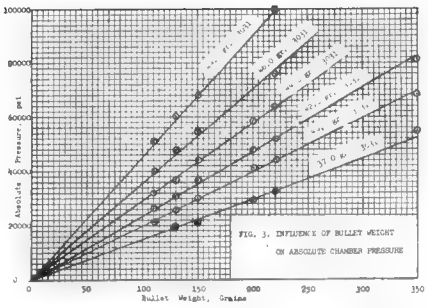
Therefore, the pressure for a 44.0 grain load of 3031 powder in a 30-06 cartridge in Barrel C can be predicted for any weight bullet. For example, what will "p" be for a 100 grain bullet and a 44.0 grain load?

p equals 291 psi/gr (100 gr) equals 29,100 psi absolute

If we read the chart in Fig. 3, we get about 29,000 psi for a 100 grain bullet and 44 grains of 3031 powder.

Coefficient "a" Varies with Load

Let us return to Table II and select another load, say 40.0 grains of IMR 3031 powder for 110 cut, 130 cut, 150 cut, 200 cut and 220 Remington SPCL



and 348 grain compound bullets. The absolute pressures from Table II are 21,500, 26,000, 31,000, 41,800. 44,000, and 68,000 psi for these different weight bullets increasing in respective order. This gives us another straight line in Fig. 3 which passes through zero. Again, we substitute into the data for the 220 grain Rem. SPCL which gave a test pressure of 44,000 psi. Solving for "a" again by substitution we have:

a equals 44,000 psi/220 gr equals 200 psi/gr

As a check we will predict the pressure for the 348 grain compound bullet, or

p equals 200 psi/gr (348 gr) equals 69,600 psi absolute

Reading the straight line of the chart of Fig. 3 at 348 grains, we obtain about 69,000 psi whereas the test value in Table II is 68,000 psi. Thus, we have a slight error but this is to be expected from the individual nature of each load.

In a similar manner, the values of "a" can be calculated for the other straight lines in Fig. 3. Note that the values of "a" changes with each powder load. In concluding this discussion, we can say that if the powder load and other factors such as the bullet jacket factor, "J" are held constant, the maximum absolute chamber pressure will be directly proportional to the weight of the bullet. Double the weight and we double the pressure, halve it and we halve the pressure, a 10% increase in weight and we get a 10% increase in pressure. Handy to know, isn't it? Note that we have found this relationship with "absolute" pressure which we determine by either strain gage or piezo gage measurements. What if we wish to know the relationship between crusher values and bullet weight? After all, this is of more interest to most handloaders.

Well, the transfer of absolute pressure to crusher values is rather simple if not precise and will be covered in the next of this series. In the article after that we will take a closer look at this effect of change in the value of "a" so that we can predict how "a" varies with powder load.

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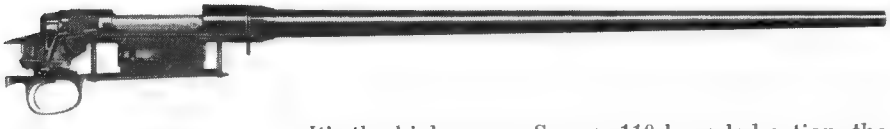

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A Ten Can Give You Twenty

By RICHARD J. DeNEVE
803 Liverpool Rd.
Liverpool, N. Y.

Many bench rest shooters feel that a scope should not be mounted on a rifle barrel for several reasons: a possible change in point of impact as the barrel expands on heating, the often severe vibration from the barrel transmitted to the scope as the gun is shot, and the possible effect of drilling and tapping holes in an otherwise stress-relieved barrel are among them.

At the same time, a shooter generally needs a scope of sixteen or twenty power to see and accurately dope mirage. Scopes presently made in these powers are quite long, require external mounts, and often must have the front mount somewhere well ahead of the receiver. If he wants a scope of over twelve power, a shooter must either mount it on the barrel or install a bridge clamped between barrel and receiver, and extending out over the barrel.

Mike Walker is presently working on the development of compact high power scopes, and had 15X and 20X versions at Wapwallopen on June 1-2. He said they weigh about 14 ounces excluding the externally adjusting mounts.

I recently modified a new Weaver 10X scope to give approximately 20X with the addition of a Barlow lens, more about which soon. First a brief lesson in optics may be in order.

The magnification of any refracting telescope (which uses the refractive properties of glass to converge light rays to a single point, as opposed to a reflecting telescope which uses a concave mirror for the same purpose) is governed by the ratio of the focal length of the objective lens to that of the ocular lens. For example a lens with a focal length of 12 inches used as an objective with a lens of focal length (F.L.) of 3 inches as an ocular will have a magnification of 4X. Changing to an objective lens of F.L. 30 inches will give a magnification of 10X. The focal length of a lens is defined as the distance between the center of the lens and the point at which light rays coming from infinity are converged. Fig. 1 may help to illustrate this. The focal point of the objective must coincide with that of the ocular lens or the telescope will not work properly. If light rays originate closer than infinity, the objective lens must be moved slightly toward the ocular to compensate. Hence the range or parallax adjustment on higher power scopes where this effect is more noticeable.

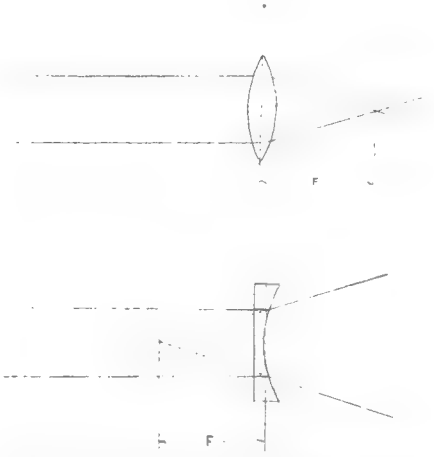

Fig. 1—A converging lens (above) and a diverging lens, where F is the focal length.

Most astronomical telescopes show a view that is inverted, or upside down. On the other hand, terrestrial telescopes (used for looking at other points on the earth) have an extra pair of lenses, erector lenses, to turn the image right side up again. Rifle scopes, of course, are in the latter category.

In 1810 or 1815 (depending on which source you read), an English scientist named Peter Barlow developed a diverging lens which, when inserted in a telescope, increases the power of it by virtually any amount, depending on its placement. A diverging lens spreads out the light coming from infinity. If the refracted beam is traced in a straight line through the lens, it will converge between the lens and the light source. Such a lens is said to have a negative focal length. Again, see Fig. 1.

Fig. 2 may help to understand how a Barlow lens works. It is placed between the original focal point of the objective lens and the objective, but not more than its own focal length away from the original focal point. For example, a lens with a focal length of –2 inches must be placed between 0 and 2 inches from the objective focal point. If the Barlow is placed at 0 inches, no magnification will result. As it is moved toward the objective lens, it spreads out the converging beam of light coming from the objective lens, and moves the focal point of the objective lens back toward the ocular lens; more important, it decreases the angle of the beam, and makes the ocular lens "think" that the beam is coming from an objective much farther away. As the Barlow is moved near two inches from the original focal point, the new focal point moves rapidly toward infinity until, at two inches from the original focus, the image is at infinity, i.e., no image is formed.

The power amplification is a ratio of the distance from the Barlow to the new focal point, to the distance the Barlow is moved in from the original focal point. In Fig. 2, A equals Y/X, where A is the amplification of power resulting from moving the Barlow a distance X from the original focus. Y is the distance between the Barlow and new focal point. The focal length of the Barlow is important in the placement of it, and is governed by the equations

X equals f(A-1)/A, and
Y equals f(A–1),

where f is the Barlow focal length.

In our example of a Barlow lens of F.L. equals –2 inches, let us postulate changing a 10X scope to 15X; that is, let the desired amplification A equals 1.5. Then

X equals 2(1.5–1)/1.5
equals 2(0.5)/1.5
equals 0.667 inches.

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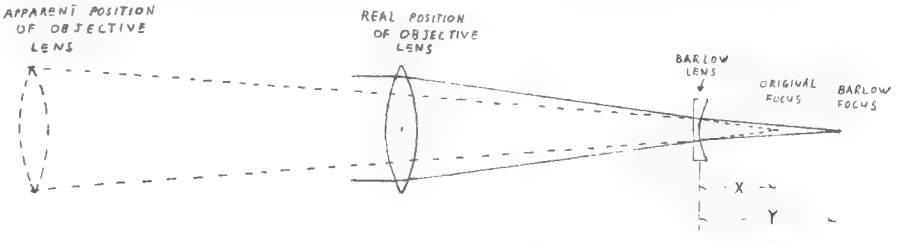

Fig. 2—How a Barlow lens works. The symbols are explained in the text.

We would have to move the Barlow lens 0.667 inches toward the objective lens from the original focus point. The new focal point would then be

Y equals 2(1.5–1)

equals 1 inch from the Barlow lens. Since the Barlow lens was moved in only 0.667 inches from the original focal point, this means that the new focal point is now 0.333 inches toward the ocular lens from the original. As mentioned earlier, the focal point of the ocular lens must coincide with that of the objective lens. This means the ocular must be moved back also, to a distance of 0.333 inches from where it was. While this increases the length of the telescope slightly, it is more desirable than making a scope nearly half again its original length by installing an objective lens with a focal length 1.5 times that of the original.

As can be deduced from the equations, the power amplification can be any value, but for practical purposes cannot be more than about 3 or 4. Let us let A equal 10 as an illustration. Then

X equals 2(10–1)/10

1.8 inches toward the objective the Barlow must be moved. Not too bad. Howeven, then

Y equals 2(10–1)

equals 18 inches, and thus the ocular lens must be moved back 18 - 1.8 or 16.2 inches, quite a bit. Alignment and positioning problems become very large. And who needs a 100X rifle scope, anyway?

Let's pause a bit on the way from theory to practice, and learn a little (i.e. all I know) about the internal make-up of Weaver 10-power scopes. In the old types, before the days of the constantly centered reticule, the image was stationary on the way through the scope, and the crosshairs were moved around on the image. (The crosshairs were located at the focal point of the erector lenses to permit them to be in focus.) A Barlow lens could be very easily installed in this type of scope, but the crosshairs would be enlarged along with the rest of the image. Furthermore the crosshair movement is magnified and, with the reduced field of view, could probably be moved right out of the sight picture. One would likely need external windage and elevation adjustments.

The newer K10 scope has the erector lenses mounted in a tube which is pivoted at the rear and held by firm springs against the adjustment screws. As the screws are turned, the erector lenses "sweep" the image from the objective lens. As the crosshairs are located at the focal points of the objective and ocular lenses, they do not move. The image is moved across them instead. Mounting a Barlow lens in this type of scope, while much more difficult, has the advantages of same-sized crosshairs, constantly centered, and the retention of the full use of the internal adjustments.

I will now attempt to give a short rundown on getting a Weaver K10 scope apart in one piece. (I wasn't successful; I broke the crosshairs.) Remove the ocular lens assembly and its lock ring by unscrewing. You now have voided the guarantee. Near the end of the threaded tube are three holes, 120° apart, and inside the tube about 0.435" are the crosshairs. They are held by a ring which in turn is held in place by dents in three fingers which protrude into the holes in the scope tube. Take a small hook, e.g. a reshaped crochet hook, and reach beneath the crosshair ring and lift while at the same time pushing the dent out of the hole in the scope tube. Do this three times, once for each

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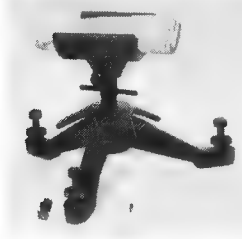

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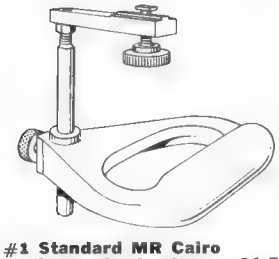

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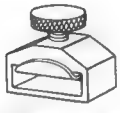

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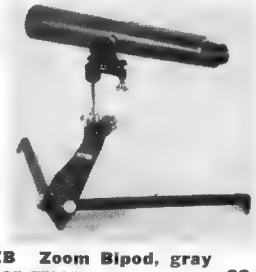

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finger, and jockey the ring to the end of the tube with the hook.

Here is where the wicket gets a bit sticky. Inside the tube (see Fig. 3) there is a thin metal washer which serves to keep stray light from coming around the erector lens tube. It is held in place by a spring, the other end of which rests against the base of the reticule ring. As the dents in the fingers clear the end of the scope tube, the spring will push the reticule ring forcibly out, breaking the copper wires against the hook shank. To prevent this, hold the tips of your fingers against the fingers of the reticule as they start to emerge. As the dents clear the tube, put down the hook and ease out the reticule. (The copper wires are .001 inches in diameter, and are soldered to the steel reticule ring. The ring itself has six fingers, three for positioning, and three for alignment.) The spring and washer then can be removed.

Next, remove the adjustment screws simply by unscrewing them. Underneath them are two screws which hold the click springs and adjustment housing onto the outside of the tube, and serve also to hold the erector housing tube in place. Unscrew them and remove the adjustment housing.

Place your finger inside the end of the erector tube, crook the end joint to wedge it there, and draw out the tube with it. The arm which holds it in place will fall off as it clears the end of the tube. We are now ready to install the Barlow lens. (The objective lens does not need to be removed.)

My Barlow lens (stock #30328, from Edmond Scientific Co., Barrington, N. J. 08007) was .912 inches in diameter. I was faced with the choice of grinding the lens to .735 diameter to fit into the erector housing, or to cut the end off the erector housing and figure out how to remount the arm that holds it in place. I decided to grind. I have access to a flat lapping plate, and ground the lens edges on it using 180 grit wet or dry sand paper. The lens must be ground wet to prevent chipping and cracking due to localized heating. The surfaces must not be scratched, and the lens must be ground on center. I centered a dime on the lens, painted around the dime, and then ground away glass to leave a thin rim of paint evenly around the edge, until the desired diameter was achieved.

A more desirable way of doing this would be to mount the lens between two rubber-tipped rods in a lathe, and feed in a grinding wheel a little at a time. The lathe should be turned slowly (by hand, for "feel"), and coolant should be flowed on the work. This method, or the use of a similar jig on a surface grinder, would allow the work to be done quickly and accurately, while holding the edges of the lens square to its axis. The lens should be not more than a couple of thousandths of an inch smaller than the inside of the erector tube (about .735") for alignment purposes. To avoid cracking the lens during recoil, I mounted it in rubber, as shown in Fig. 3, by making two washers, one of metal and one of rubber, to place ahead of the Barlow at the start of the taper in the erector housing. I also filed down the tab on the erector housing arm to half its original height, to keep it from contacting the lens. Behind the lens I placed an O-ring held in place by an aluminum tube. The tube was a snug press fit, so I sealed it in place with a high temperature melting wax. (I also used this wax to glue new crosshairs in place on the reticule ring.) If the fit was looser, I would have used three #2-56 Allen screws set flush to the erector housing to hold it in place. I made the inside diameter of the tube about .470", and feel that its small size limits my field of view somewhat. The rear end of it could be made larger (up to about .670") to reduce this effect.

I was able to set the Barlow lens into the erector housing about .57 inches. The erector housing was about a tenth of an inch in front of the reticule, the original focal point of the objective lens. This put the lens .67 inches in from the focal point.

Since my Barlow lens has a focal length of –1.34 inches, the equations stated earlier show that I have a power amplification of 2, and that the new focal point is .67" back from where it was. This meant that both the reticule and ocular lens assemblies had to be displaced to the rear by that amount. To effect this, I machined a piece of aluminum (type

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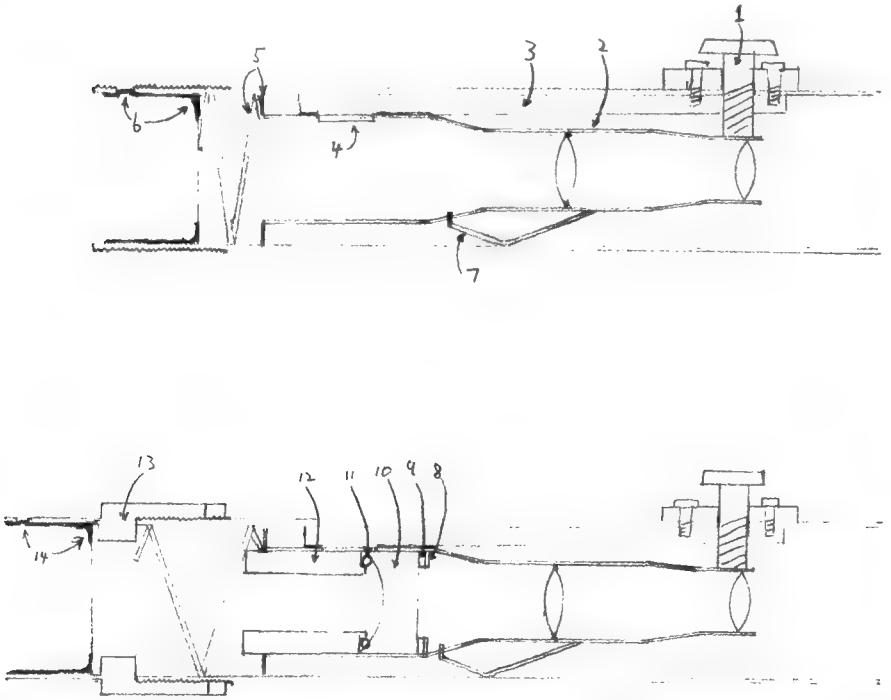

Fig. 3—Schematic diagram of a Weaver K10 before (above) and after installation of a Barlow lens (not to scale). The significant parts are: 1) internal adjustment screw; 2) erector lens housing; 3) erector housing positioning arm; 4) tab on positioning arm; 5) light seal washer and spring; 6) reticule assembly; 7) internal adjustment spring; 8) steel washer; 9) rubber washer; 10) Barlow lens; 11) rubber O-ring; 12) tube to hold O-ring and Barlow in position; 13) scope tube extension; and 14) new position of reticule assembly.

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2024, which is strong and machines more easily than softer types, but cannot be anodized) to screw onto the end of the scope tube, and onto which the ocular assembly is screwed. The inside of this piece had to be made large enough (.945") to accommodate the reticule ring, and to position it properly, I had to cut about a quarter of an inch off the threaded end of the scope tube. While I was at it, I made two extra lock rings to use on reassembly. They were cut from one end of the scope tube extension. The threads on a Weaver K10 scope are about 1.004" in diameter, 48 threads per inch. For inside threads, start with a hole about .983 i. d. I used a pointed boring bar and took four passes for internal threads, turning the headstock by hand for maximum thread length and less chance of error. Reassembly is easily accomplished.

Once the principles of the functioning of a Barlow lens are understood, installing one in a rifle scope is rather straightforward, and can be engineered as the task progresses. The table below compares my modification with the original features. An hour or so of tinkering with it on a range may be needed (it took me ten minutes) to exactly position the reticule to the Barlow focus, to line up the ocular focus to the reticule for your eye (as you do with any new scope), and perhaps recalibrate the parallax adjustment on the objective lens for distances at which the scope will be used. You may notice a slight prismatic effect (separation of white light into rainbow colors, caused by slight mismatch in the types of glasses used in making lenses) that would not be seen at lower magnification. This would not hamper the shooter for target work; in fact it may help him more readily see very light mirage conditions.

The exit pupil is reduced in diameter a little, and eye relief, while increased somewhat, is a little more critical.

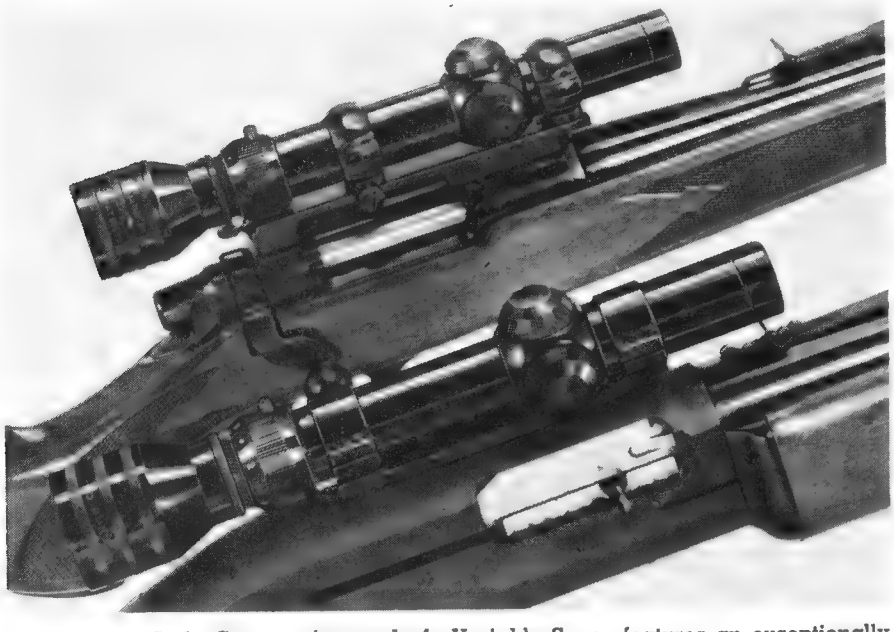
The lens cost $2.50, and the aluminum about 25¢. The job took five hours of tinkering which I enjoy, and I have a light scope of reasonably high power that can be rigidly mounted on a receiver. It will do until something better becomes commercially available.

TABLE I

Comparison of original scope with modified version*

	original	modified
Magnification	10X	20X
Field of view (feet @ 100 yd)	12	4⅔ (56 in)
Eye relief (inches)	3-5	4¼
Length (inches)	15½	16¼
Weight (ounces)	13	13¾
Max. adjustment left to right with internal adjustments	—	76 in @ 100 yd

* Measured on the modified scope (except power), taken from a Weaver catalogue on the original.



Redfield Gun Sight Company's new 1x-4x Variable Scope features an exceptionally wide field of view. At the low (1.22x) power, it covers 82' at 100 yards — and a husky 30' at the higher power.

The 1x-4x Variable was developed, according to John Jennings, Redfield General Manager, as a result of increasing demand from shooters who hunt in close, heavy cover — or who may face, at any moment, a fast-moving, dangerous game animal. The extremely wide field of view permits very fast, accurate, safe shooting with a full view of the game.

Some shotgun slug shooters had also indicated a desire for such a scope, and the new Redfield "Magnum" eye piece (eye relief up to 3-3/4"), a feature of all '68 Redfield scopes, will be welcome to them as well as to magnum shooters who have been belted by eye pieces in the past. Other improvements in Redfield's Variables include beefed-up internal adjustments, positively sealed and enlarged to permit easy thumb-and-finger adjustment. Coin-slot remains for those who wish to use it.

The new scope is available with a wide choice of reticles: Medium Crosshair; 4P CCH, 4-Plex, PCH and 3"-1" Dot.

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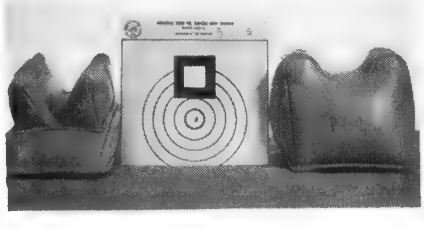

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The Rifleman's Corner

By GARY L. ANDERSON

In May I was a member of the USA team which toured Europe for pre-Olympic competition. One of the interesting things we did was to be part of Olympic team eliminations of at least three countries. The process of selecting Olympic team members in European countries is much different from our own system of having a simple three day tryout firing the standard course once each day.

In West Germany, for example, a competition was held in April, at the very beginning of their shooting season, which was used as a basis for selecting a national team. The national team concept is widely accepted in all the European countries which have good shooting programs. It is from these teams that the members of Olympic or World Shooting Championship teams are selected. This year the Germans selected eight rifle and twelve pistol shooters, on the basis of this first tryout and on the basis of past performance. This selection is made by the national shooting coach and other officials in the German Shooting Association. Apparently, the door is left open for new additions or dropping current members if someone's competition performance warrants this.

When we fired in Wiesbaden, West Germany, we competed against this German national team and a portion of the national team from Russia. For West Germany, this was their first Olympic tryout match. During the course of the summer, other International competitions will be fired which will count as Olympic tryouts. Final selection will be made on the basis of scores fired in these matches.

Our second match in Switzerland was also an Olympic tryout for that country. The Swiss have twelve men designated as members of their National rifle team. The Swiss probably have a longer list of tryout matches than any country except Russia. The Russians also have a long series of tryout matches in which they progressively eliminate contenders, although final selection is generally not made until just before departure to the competition site.

Our match with the four Scandinavian countries in Stockholm was also an Olympic tryout for Sweden. The Swedes will have three other elimination matches in addition to the ones in which we fired. One will be a match in Poland, another their National Championships in August, and one other International match in July.

The Swedish Olympic Committee has also established a set of qualification scores so high that the top two men in the Swedish Olympic trials in each Olympic shooting event may still not qualify for the trip. To qualify for the Olympics, their 50 meter three-position competitors must fire one score in the four tryout matches of at least 150, with 369 or better standing. 300 meter shooters must fire one score of at least 1145 and 50 meter prone shooters must fire 596 or better. Apparently, the Swedish Olympic leaders have decided not to take competitors whose performances indicate they do not have a chance to win a medal. I suppose this is further proof that not competing but winning is the real goal in today's Olympics.

The International Olympic Committee has said that only four rifle shooters may be selected to fire the three Olympic rifle events. Most of the strong shooting countries try to select two 50m position shooters and two 300m shooters and then enter the two best prone shooters in the 50m prone match. In the last two Olympiads, USA position shooters have won a gold, a silver, and a bronze medal in the 50m prone match. In contrast, West Germany is selecting two 50m position shooters and two 50m prone shooters this year. Legal restrictions against range noise and against handloading have just about eliminated 300 meter shooting in that country. They have decided to concentrate on smallbore only.

The 50m prone match is, in fact, the most popular single event in the Olympics. Many of the countries without top shooters focus on this match because it requires so much less training. The short course of fire (60 shots) and the emphasis on rifle and ammunition accuracy in prone shooting instroduces just enough of the luck factor that these people feel they might have a chance to win while they cannot hope to keep up with the top shooters in position shooting or even with other prone shooters over a long course of fire.

One of the most encouraging things I saw on this trip was the large number of young new shooters on the various national teams. The average ages of the Russian and American

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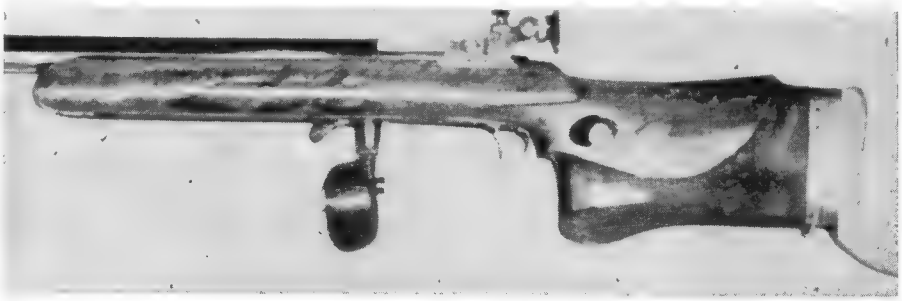

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teams were both about 28, but this was perhaps our youngest team ever. Surprisingly, the Russians did not take a single man who had not been on an International traveling team before. But in the other countries we competed with, the famous names like Hollenstein, Ylonen, and Janhonen are being replaced by new names like Ruch, Truttman, Laakso, Morri, Edling, and many others. Soon these will be the names to watch. The Finns had only one experienced shooter, Esa Kervinen. The youngest shooter we faced was a 20-year-old West German medical student, Dick Fudikar. The top Swedish shooter in the matches with us, 23-year-old Sven Johansson, is being sent by his shooting association to train in America this summer.

The Russian system for training their Olympic candidates this year appears rather unique. Starting in January, they have called their national team members together in various locations for up to two weeks out of each month. All other training is done alone at home since most Russian shooters are either students or have some kind of job. In contrast to East Germany, the Russians are not kept in one central location through the whole year. The Russian team competes in International matches in May and June and their own National Championships in July. September will be devoted to high altitude training for the Olympic team candidates.

As always, there were a number of new developments in the Russians' equipment. This time three of the four smallbore shooters were shooting with Anschutz rifles and all used British 10-X ammunition. Except for the Hammerli free pistol Makhmoud Umarov used to use, this is the first time we have seen them using non-Russian equipment in many years. Most of our shooters have always believed that the butt-plate hooks should extend to the legal limit (6"), so we were amazed when most of the Russian shooters showed up using hooks no longer than three inches. We still haven't figured out the reason for that one. By now, the Russian shooters have become as devoted to frequent cleaning as the American shooters. One Russian shooter, Alexander Gerasimenok, shot with a matched pair of smallbore and bigbore rifles that were adjustable in just about every conceivable way. The front and rear sights and cheek-piece could be raised up and down as much as 2-2.5 inches. The stock was cut at the pistol grip so the whole butt stock could be canted in any direction. The front part of the trigger guard serves as the setting lever for the trigger. The new action is slightly shorter and round.

The trip was valuable and taught us a lot, but now it is time for some serious training before our Olympic tryouts in Texas in July.

NRA President Warns of Move to End Private Gun Ownership

Step-by-Step Legislative Campaign Underway, Glassen Says

Washington, June 13—The President of the National Rifle Association warned the American people yesterday that there is a "syndicated" attempt underway to eliminate private gun ownership in the United States.

Referring to the large number of editorials and editorially-slanted news stories syndicated to many other newspapers by a few large metropolitan dailies which back strenuous new gun legislation on, NRA President Harold W. Glassen told a news conference at NRA's Washington headquarters:

"We are seeing a mass attempt — a syndicated attempt — to deceive the American population into believing it should abrogate the Second Amendment to the Constitution. (The Second Amendment reads: 'A well-regulated militia being necessary to the security of a free state, the right of the people to keep and bear arms shall not be infringed.')

"We read in the Christian Science Monitor that what this newspaper calls gun control laws have the editorial backing of 93 percent of all newspaper circulation. I believe this, for that's practically all I see splashed across the front pages."

This is having its effect on the population and on Congress, he indicated. He said:

"Today we are witnessing an almost unbelievable phenomenon in America.

"We are witnessing the strange and masochistic spectacle of tens of thousands of normally proud and level headed Americans begging the federal government to take from them by force of law one of their basic civil rights, the right to keep and bear arms.

"Make no mistake about it — there is a step-by-step move afoot to accomplish the ultimate deprivation of the American right to keep and bear arms.

"We were told five years ago that the gun control legislation then being proposed would not interfere with the rights of sportsmen and other private citizens to keep and bear arms for legitimate pursuits.

"We have been assured time and time again that legislation to impose restrictions on mail order sales of firearms was the final objective, and that there would not be a subsequent attempt to add further restrictions.

"We have been told that there was no intention to propose a requirement for national registration of firearms.

"And we were accused of misrepresentation when we warned that registration was a possibility, and of being downright irresponsible when we suggested that firearms registration was being seriously considered.

"Well, who's right now? The NRA voiced the suspician that control of interstate sales of firearms might be only the 'first step' toward such measures as registration. And we were right.

"Several bills have now been introduced to accomplish national registration of firearms, and pressure is being applied in Congress to rush this measure through to completion. This is the 'second trip' which we feared.

"And now, today, we have seen the 'third step' instituted in the form of a bill in the Senate (sponsored by Sen. Joseph Tydings of Maryland) to require a license for the purchase or ownership of firearms.

"Do we have to say more. Do we have any reason to believe there will not be a fourth and final step in what appears plainly a plan to disarm American citizens? Do we have any reason to trust those who have assured us that their aims fell short of this mark?

"I don't think so, and I warn the American people that if Congress is lured into accepting this reassurance, the ultimate is inevitable, and there will no longer be private ownership of guns in the near future."

NRA BACKS LIMITED BILL

Glassen pointed out that NRA backs legislation aimed at keeping guns out of the hands of criminals, juveniles, mental patients and others who should not have them, adding, "But we would not, at the same time, deny the right to those who do not fall into these categories, and we would clearly define these categories to include only those who should be included. We would protect the rights of millions of Americans who are perfectly capable of using a gun safely, and who prefer to exercise their right to own one."

Random Shots

Betty Summerall Duncan

By BETTY SUMMERALL DUNCAN

Vietnam veterans dominated the smallbore phase of the **8th Annual Interservice International Shooting Competition** as M/Sgt WILLIAM E. KRILLING won the English Match and CAPTAIN LONES W. WIGGER, JR., equaled his Olympic World Record of 1164 to capture the 3-positional championship. . . . The world's top feminine star, petite CAPTAIN MARGARET THOMPSON, exhibited solid power in her 300-meter victory.

Krilling, who began his journey home on St. Patrick's Day, is the most recent of the USA MTU stars to return from the battle zone. It is quite remarkable that he was able to get into shape so quickly and outrank the 597 fired by S/Sgt Raymond N. Lewis of the Air Force. Both equaled Major Tommy Pool's Interservice Record. It was with a 596 that Krilling earned the bronze medal in the 1966 World Championships.

In all due respect to the new National Recordholder for the English Match, metallic sights — firing on #1 position on the virtually enclosed range at Santa Monica, Calif., is no comparison with firing from a booth at Ft. Benning over open terrain. Knowing both ranges, I cannot honestly declare that 600 plus 24 additional 10's is a better score than a 597 shot under more adverse conditions. In order to draw an accurate appraisal, it would be necessary to have the various shooters concerned fire the course shoulder-to-shoulder.

If Lones Wigger lost any proficiency during his Vietnam tour, it was quickly regained. He took full advantage of this warm-up for the final Olympic Team tryouts. His runner-up in the 50-meter 3-positional event, with 1159, was his fellow-Montanan, **Major John Foster,** another Vietnam veteran. **Margaret Thompson** scored 1158 for 3rd place.

Margaret held the reins at 300-meters by taking the kneeling, standing, and Aggregate with an exception-1156. **Major Presley Kendall,** who claimed the prone free rifle stage, was second in the aggregate with 1150, as **Captain Bruce Meredith** placed third.

Army Blue established new team records in all three events, by upsetting their own previous records. In 3-positional smallbore, their new record is 4638 over the previous 4588. For Free Rifle — 4595 over the old 4563. The English Match netted only a 2-point raise — 2377 over 2375.

Los Angeles—June 15—The following was written prior to the shocking and tragic assassination of Senator Robert F. Kennedy in the City of the Angels. Murdered by a subversive alien just outside the Embassy Ballroom of the Ambassador Hotel, where the National Rifle Association convened in 1964, this alleged Communist violated at least four severe gun control statutes of the State of California. Let us urge our Senators and Congressmen not to be swayed by hysteria. We must advocate vigorous law enforcement and swift punishment of the criminal, the law violater who places our freedoms in jeopardy. Immigration laws must be overhauled to suppress and screen the aliens who harbor hatreds and prejudices which endanger the lives of our leaders — and our American way of life . . . Those who act now in the heat of passion should be thankful that, at least, the assassin did not toss a bomb into the crowd on June 5th . . Do not delay to contact your representatives. The law of the land must not be an act of vengeance!!!

—BSD

★

Western Nationals Smallbore Characterized by Surprises

Never again will DOUG BEEDE, of Walnut Creek, Calif., compete as a "dark horse". He "made the scene" in a big way on May 4 - 5 as he hurdled over some high velocity competition to win the **12th Annual Western Nationals Smallbore Prone** crown.

His incredible **1600** possible with **metallic sights** under erratic wind conditions really rocked several well-known iron sight shooters — until, they recovered sufficiently to congratulate him. In his first tournament on that range, the genial Beede became the 4th member of the Los Angeles Rifle & Revolver Club's exclusive "Iron Sight 1600 Club", joining William J. Grater, Captain James E. Hill, USMC, and Robert E. Boydston.

Analyzing wind patterns: in the Dewar, which went to Boydston's 400-30X, and the 100-yd, won by Peter Holden's 400-31X, the switches in direction were generally worth about two 1/4-minute clicks of elevation for a 9 o'clock wind, with a 2-minute variance in windage between a 3 o'clock gust . . . Shifts in angle, always a factor on the L.A. range,

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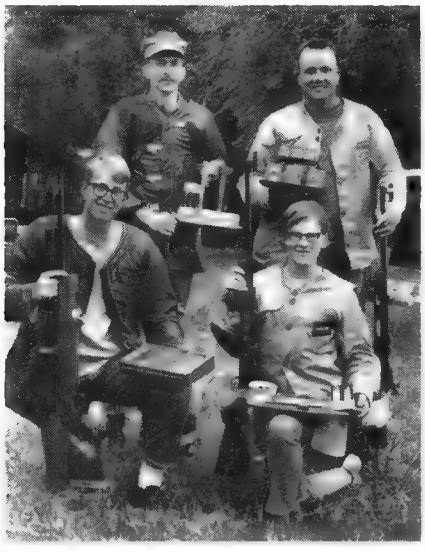

Western Nationals Smallbore Prone Champion (right standing) Doug Beede, and runner-up Corporal Peter Holden, USMCR (left standing); (left to right kneeling) High Junior, Robert Graupensperger, and High Lady, Carolyn Emery.

—Photo by Carl W. Knight

proved to be treacherous, indeed, at 50-meters for those whose vision does not immediately respond with a sight picture. The secret was to get the dope . . . and, f-i-r-e, instantaneously. Beede, who uses no optical correction, came through in perfect form with a winning 400-33X to get the jump on the field of 127 competitors. He had the 3rd-ranking 400-28X score at 50-yds, behind Jr. Expert Robert Graupensperger and Hill. What an ordeal that was! A most discourteous wind kicked sand into shooters' eyes and equipment. To protect his contact lenses, Vic Auer quickly taped on a pair of dark glasses, and shot the only other 400.

It must be conceded that conditions were a bit rougher when the Master Class was squadded than for the first relay. Had it not been for **Doug Beede's** 1600-114X and a 1597-112X by Cpl. **Peter Holden,** USMCR, of Wilmington, Del., the Masters would have been wiped out in the **Metallic Aggregate** by **Carolyn Emery,** a 15-year-old Sharpshooter. She fired her mother's Anschutz for the 3rd-ranking score of 1595-94X. Los Angeles Rifle & Revolver Club President, **Bob Boydston,** finished 4th with 1594-99X. Top Expert Class shooter, 17-year-old **Graupensperger,** from Orange, Calif., had 1593-109X for the 5th high score.

A gauge to the tempo of the conditions, as they became increasingly troublesome, on that first tournament day is the 2-man team match at 100-meters (standard NRA target reduced) any sights. Anticipated record-breaking went down the drain. Winners were two of the nation's best — **Bill Grater,** National Open Record-holder for the 3200 Any Sight Aggregate, and **Tom Guerin,** 1967 Western Wildcats, champ, California State Champion, etc. They need not be ashamed of their score: 791-42X. Marine reservists S/Sgt Don W. Wood, Bakersfield, Calif., and Major James A. Hinkle, Atlanta, Ga., were only 8 X's behind.

With winds subdued on the following day, there should have been more than six perfect any sight 1600's, considering the wealth of talent. George Stidworthy Creedmoored Cliff Pierson's 400-38X in the Dewar. Vic Auer entered the picture with a 400-37X win at 100-yds. After that, it was Pierson all the way. His 400-37X took the 50-meter, and he outclassed Auer's 400-35X at 50-yds . . . Then, when the Any Sight Aggregate was posted, George Stidworthy challenged Cliff Pierson's score!!! But, don't jump to conclusions; this challenge is highly commendable. There was a statistical error in Cliff's score. When George won his challenge, the ranking went like this:

Any Sight Aggregate Winner—1600-143X, Clifford C. Pierson, Sun Valley, Calif.; 1600-141X, Stidworthy, Prescott, Ariz.; 1600-141X, Auer, Sherman Oaks, Calif.; 1600-134X, Capt. Frank Briggs, USMCR, Waukegan, Ill.; 1600-130X, Hill, USMC, Camp Pendleton, Calif.; 1600-122X, Carl D. Guenther, who moved to Los Angeles last year from Wisconsin, after a tour with USA MTU.

Frank Briggs was justifiably proud of the 1596-122X turned in by his 11-year-old nephew Kevin Richards, of Waukegan, Ill. He won the Expert Class trophy, edging the 1595-122X fired by Karla Joehnck, Vic Auer's special friend and protégée.

A human interest story emerges from this victory by a former National Metallic Sight Champion. In this Olympic year, it is timely to remark that Cliff competed in the 1932 Olympics in Los Angeles, on a rickety, wooden second-story firing line where a sneeze 2-points away carried one out for an 8. But, there is more. Two years ago when we were all making preparations to go to the Western Wildcat Matches, Cliff struck out (almost). A freak freeway motorcycle accident put him out of commission for quite awhile. He was unable to **sit** while relating what happened, in addition to breaking his right arm — a disaster for a left-handed shooter. And now that he is attempting a comeback, he is plagued by visual problems with iron sights (being allergic to some plant in his

They fired perfect 1600's at Western Nationals—(left to right) Victor L. Auer; Any Sight Aggregate winner Clifford C. Pierson; George J. Stidworthy, Jr.; Western Nationals champ Doug Beede, who won Metallic Aggregate with a 1600; Captain Frank F. Briggs, USMCR; Captain James E. Hill, USMC; and Carl D. Guenther.

—Photo by Carl W. Knight

yard). What **Cliff Pierson** achieved on May 5th cannot be expressed in a few sentences. The #1 hard luck shooter ranks high in my book of champions.

Speaking of champions, the new Western Nationals Champ, **Doug Beede,** is refreshing. Due to back trouble, he waited until this spring to make his debut away from the San Francisco Bay area, and what an impact he has made! Everyone was aware that he was there at all three tournaments. But, he has an unusual gimmick! His doctor accompanies him. Dr. John Demas will soon receive his Master classification, so this is, indeed, some sort of precedent . . . Let's give credit, too, to Johnny Russell, who has assisted Beede in innumerable ways, including making the blue-filtered front sight insert, which had some bearing on the iron sight 1600.

In the final analysis, it was: 3195-244X, **Western Nationals Champion, Doug Beede;** 3194-222X, Holden; 3192-252X, Auer; 3191-248X, Grater, Camarillo, Calif.; 3191-247X, Stidworthy; 3191-233X, Hill; 3190-236X, Boydston.

Ernest B. Lamb, Whittier, Calif., had an outstanding 3186-214X score to win the High Unclassified award. Having completed an Army tour, he is from a shooting family.

Graupensperger won the Junior Championship with 3185-224X, so the **High Expert** award went to Cpl. Thomas K. Ritter, of Davenport, Iowa, for a 3183-216X.

As **Carolyn Emery,** Reseda, Calif., had an unapproachable lead with irons, she was able to drop 14 points in the Any Sight Aggregate and still win the **Ladies title** with 3181-172X.

It was good to have Jim Hill, 1960 Olympic silver medalist, and G/Sgt Pasco Tomberlin, USMC, back from Vietnam.

Beginners Corner

The purpose of this letter is two-fold — on the one hand it is intended to report the progress of a beginning bench-rester, on the other, it is perhaps a recounting of my problems, which may be of interest to other beginning "bench resters".

How did I get started? — In 1957 the NRA offered a serviceable Springfield for $32.00, and I got one. Rebarreled to 6mm (.243 Win.) I realized a woodchuck rifle which I had never experienced before — I shot woodchucks at ranges that I would not have attempted with the .22 Hornet I used until then. On a memorable Saturday I ran into an old shooting buddy (the guy who taught me how to re-load), Mr. John Kohler of Avon, Conn. We discussed the ability of our rifles and he mentioned that he wasn't satisfied with the grouping performance of what rifles he owned. Shortly afterward he told me that he had contacted Ed Shilen, who was then making actions with Ross Sherman in Dryden, N. Y. This solution, at the time, was beyond my financial capabilities so I held off. However, I began going to the winter shoots set up by S.S. & D., Clinton Corners, N. Y. and shortly discovered that one-half inch groups of five shots at one hundred yards was not good enough!

During the fall of 1965 I contracted with Ed Shilen to build a heavy varment rifle in .222 Rem. caliber and I was fortunate enough to get one of the last barreled actions that Ed built before he moved to Texas. With a rifle that was capable of one-eighth minute groups at one hundred yards, I now had a problem — could I shoot that well!

The first winter I shot the rifle I for sure was an also ran! But, I practiced most of the following summer and the winter "SNO-BALL LEAGUE" of 1966-1967 I won the smallest group aggregate at .3935" for (48) five shot groups. (This was all at 100 yards only.) During this time I received all kinds of advice on how to perfect my shooting.

I learned how to select my cases —weigh a group of factory un-primed cases and choose a group of (20) cases which were within 1.0 grain of each other. Case preparation also included neck reaming (inside) to ensure the so-called "point" bullet contact rather than the longer sleeve-type hold which results when cases are not taper reamed. These friendly tips from more experienced shooters have been invaluable. In no other shooting sport have I found competitors so willing to share information gathered by experience. A few examples: from Crawf Hollidge—"Reduce powder charge a couple of grains when fire-forming to prevent premature expansion of primer pockets." It works! From Al Angerman—"Never tighten neck-size die all the way if using typical dies in a typical bench type press. Leaving it just 'cracked loose' will tend to cancel as much as possible the accumulated errors in concentricity in ram, shell holder, press threads, die threads and cavity." It also works! From Ed Shilen and John Dewey—"Unless using a dot reticle scope, hold on the aiming square." This seems, perhaps, obvious, but I stumbled over this because I borrowed a dot equipped scope before my own was delivered. I wasn't smart enough to switch to the square when my own cross-hair scope went into service. This cut my group size considerably and allows a positive "hold over" for a cross wind. An idea of my own that I'm surprised more shooters don't follow is helpful in maintaining rifle position. Put the battery stop on the front pedestal directly over the single leg, rather than protruding between the other two. This puts the single leg pointing directly toward target making it virtually impossible to "bump" the pedestal out of position if the rifle is returned to battery unnecessarily (or carelessly) too hard — during the heat of battle! I find a tremendous part of this bench rest shooting is the chance to be a designer of "gadgets" which become part of a shooter's equipment. Bob Hart once said that if the thought and energy that goes into the designing and making of these "gadgets" was applied in the development of shooting skill, the shooter would be ahead! I reckon he is right! I find however that if my equipment is neatly organized and right where I want it to be, be it loading equip., cleaning equip. or what-all, with the help of my gadgets I am able to concentrate on group size! I've been to matches where usually the same shooter(s) have forgotton something and their anxiety and "chicken-with-the-head-off" running around bit is rapidly transmitted to other shooters. I'm always happy if I have a spare something to loan someone — I've been in their spot — and I find it an awful lot easier on my own match jitters if I'm organized and equipped. "I'm glad I am —don't you wish everyone could be" type thing.

About the only aspect of bench-resting I haven't gotten involved in is my own bullet making. I've been an out-of-the-box Sierra bullet user and they are good! Since it is almost impossible to find a significant variation in weight of the 53 grain Sierra bench-rest H.P., I got interested in how they did differ, if at all. Accordingly I began measuring them, dimensionally. Diameter-wise these bullets are near perfect and after checking about a hundred I decided I was wasting my time. Then, I meausred length. Here I found some variations so I categorized them. Out of three hundred measured, all are between .695" and .715". Just over 40 percent measured .705" to .710"; 30 percent measured .700" to .705"; 20 percent—.710" - .715"; and out of 300, only 30 bullets were under .700". I don't know what this means, if anything, but if I can find the answer to 4 shots in one hole, with 1 opening the group to 4 or 5 or even (horrors!) 6 tenths, then this is indeed what we are all pursuing this fascinating racket for. Just look at all the fun I'm going to have finding out if all my .705" to .710" Sierras shoot into one hole!

Hope I haven't bored you with my beginner's comments and rambling talk. Hope also to see you at Johnstown, June 15.

Sincerely yours,

BOB WADE

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The Effectiveness of Current Gun Laws

By CHARLES DICKEY

(NOTE TO EDITORS: New York City and New York State are the only test cases in the United States of the effectiveness of firearms registration, now being offered in Washington as a panacea. The Sullivan law, passed in 1911, requires the registration of all handguns. Early this year, New York City passed an ordinance requiring registration of all firearms. Because registration is topical, we are sending you extracts from a new study by NSSF. It is the only completely documented statistical study ever made on the results of registration. The report will be published in a month. If you want a Xerox copy of the full report, please let us know.)

"With a population of over 8 million, New York City allows less than 2,000 private citizens, not connected with law enforcement and protection, to own handguns."

How much would national registration of all firearms cost? "A cost analysis of firearms registration was conducted in 1967 by Mayor John V. Lindsay, chief proponent of the newly-enacted rifle and shotgun law. This study put the cost at no less than $25 per gun **owner** and concluded that the ultimate cost could run as high as $25 per **firearm.** This would mean that the initial, first-year cost to the people of New York State for such a law would be no less than $100 million."

(Note to editors: No one knows for sure how many firearms there are in America. Estimates range from 100 million to 200 million, the latter figure being the one most often used. Using Mayor Lindsay's estimate of the cost of registration, national registration of all firearms would cost as much as $5 billion. Others have estimated that national registration would cost between $1 billion and $2 billion the first year. The total spent on all law enforcement in the United States is from $4 to $5 billion a year.)

Quoting further from the study:

"In 1966, firearms of all types, including zip guns, toy guns, alleged guns, and gangster weapons, were involved in 2.36 per cent of all serious crimes committeed in New York **State.** Rifles and shotguns were involved in no more than sixteen-hundredths of one per cent (0.0016) of these serious crimes."

"Where firearms were misused in the commission of serious crimes, unlicensed handguns constituted by far the major problem, despite the existence of the Sullivan law since 1911. Unlicensed handguns were used in 83.4 per cent of all firearms crimes in New York **State** in 1966. Zip guns were used in another 9.4 per cent."

"These patterns of firearms misuse were much the same for New York **City.** In 1966, 2.85 per cent of all the serious crime in New York City was committed with the aid of firearms. Unlicensed handguns accounted for 87.16 per cent of the firearms crimes. Thus, enforcement of the Sullivan law has not resulted in a substitution of rifles and shotguns for pistols by the criminal element."

"New York ranked second in rate of serious crime among the fifty states in 1966. It had the highest larceny rate, the third highest robbery rate, and the fourth highest burglary rate. It ranked twenty-third in rate of murder, eighth in rate of aggravated assault, thirteenth in rate of forcible rape, and tenth in rate of auto theft."

"Of the 185 U. S. Standard Metropolitan Statistical **Areas,** the New York Standard Metropolitan Statistical Area had the country's second highest total serious crime rate for 1966. It had the highest larceny rate and the third highest robbery rate. It ranked sixty-fifth in rate of murder and non-negligent manslaughter; twenty-third in rate of aggravated assault; forty-second in rate of forcible rape; thirteenth in rate of burglary; and twenty-first in rate of auto theft."

"Although New York **City** accounted for 43 per cent of the population of New York **State** in 1966, it was responsible for: (1) 74 per cent of the murders, (2) 82 per cent of the aggravated assaults, (3) 90 per cent of the robberies, (4) 74 per cent of the forcible rapes, (5) 70 per cent of the burglaries, (6) 74 per cent of the larcenies, and (7) 71 per cent of the auto thefts which occurred in New York **State** in that year. This indicates that the New York **State** crime problem is primarily a New York **City** crime problem."

"Both the 1966 firearms murder rate and firearms aggravated assault rate were substantially greater in New York **City** than in the New York **State** area outside of the city. In fact, the combined rate was nearly five times as great in New York **City** as it was in the rest of the state (37.4: 7.6). For the years 1962-1966, the firearm homicide rate in New York **City** was 2.1; in the rest of the state, it was 0.8. This happened in spite of the fact that New York City has special ultra-restrictive powers under the Sullivan law."

"Since 1930, New York City has gradually reduced the number of pistol permits issued, particularly the the number of premises permits, the type granted to store owners. In 1930, there were 6,363 premises permits and 28,295 carrying permits. By 1966, these had been reduced to 282 and 18,295 respectively. But in the period 1940-1966, murders increased 237 per cent, police strength increased 151 per cent, and police department expenditures increased 232 per cent in terms of constant dollars. Pistol seizures more than tripled. At the sametime , the population increased by roughly four per cent. Despite the most severe pistol law in the country and a steady reduction in the number of legally-owned pistols, crime increased substantially and the number of illegal pistols in circulation has continued to increase. The failure of the Sullivan law to accomplish its avowed purpose of keeping pistols out of the hands of criminals is clearly evident."

"The vast majority of pistol licenses in New York **City** are issued to bank guards, private investigators, railroad police, night watchmen, armored car guards, railway express agents, private detectives, employees of private security agencies and other persons who require a firearm for use in their employment. Only about 10 per cent, or less than 2,000 of the existing handgun licenses are issued for purposes of gun collecting, target shooting or personal defense. Thus, legal ownership of a handgun for home and personal protection is almost non-existent in New York **City.** In addition, the restrictions of the Sullivan law have all but eliminated the ownership of handguns for competitive shooting and sport hunting."

"According to the President's Commission on Crime in the District of

Columbia, 'New York City administers the Sullivan law's licensing provisions restrictively with the apparent goal of making private ownership of handguns as uncommon as possible; compliance is made burdensome and pre-licensing investigations are exhaustive.' It is not a simple matter of whether or not a person is entitled to own a handgun — the application is made burdensome. There are no data which would even suggest that the Sullivan law has reduced crime rates in either New York State or New York City. Any contention that the law has been effective as a crime control measure rests on pure speculation. The weight of statistical evidence rests on the opposite premise, i.e. that the law has not been effective."

"Since 1911, New York has required a permit for the possession of a pistol in the home or in a place of business. Under the Sullivan law, the filing of an application for a pistol license is a very complex procedure. The applicant may be required, among other things, to complete numerous forms, undergo questioning by a police officer, be fingerprinted, furnish photographs and acquire the signatures of three persons who will act as vouchers. In New York City, the fee for filing an application, which originally was 50 cents, is now $20. If the license is denied, as it often is, the $20 fee is not returned to the applicant but instead goes into a police pension fund."

(Note to editors: The Sullivan law is the "model" law President Johnson asked all states to adopt.)

An article on firearms legislation in the Western Reserve Law Review states that:

> "Although the state of New York has the strictest regulation of firearms in the country, New York City has additional provisions. The attitude of the police department, which is charged with the issuance of firearms permits, is that a private citizen has no need for a handgun. If a permit is issued, it is for one weapon only; apparently the police cannot understand why any private citizen would want to own more than one handgun. In New York City, a handgun permit must be renewed each year thereby discouraging such renewals. Since there is no statutory command stating the grounds upon which a permit shall be issued, such procedure is largely one of discretion with the licensing official. While the constitutionality of these provisions has been upheld, they have never been attacked strictly on the issue of an abuse of discretion. Applicants who are fully qualified are frequently denied permits in a rather arbitrary fashion — the licensing official refusing for no apparent reason. And, when the officials are replaced, and the yearly license expires, the conscientious handgun owner who has previously complied with the law may be denied renewal and have his firearm confiscated."

(Note to editors: Some of the media have wondered why gun owners object to registration with the police. Last year, Chicago granted a grand total of eleven handgun permits. With the Sullivan law as the only historical American precedent, plus the precedent in European countries, gun owners know that if the police have the power to register firearms, and say who shall and shall not own one, then the American sportsman will not long to able to own his own sporting rifles and shotguns.)

A Senator in Washington who has introduced a total registration bill cites the Sullivan law as a factor in reducing homicides. He gives partial statistics.

The full statistics are: In 1966, 36 per cent of the criminal homicides in New York State were committed with a **firearm** as against 59 per cent for the nation. By breaking down the data into per cent of criminal homicides committed with **handguns** and per cent committed with **rifles** and **shotguns**, it is possible to determine if the lower per cent as noted above is due to the effect of the Sullivan handgun law or is due to cultural factors.

Handguns, regulated by the Sullivan law, were involved in 28 per cent of New York criminal homicides, while the corresponding national figure was 43 per cent. Rifles and shotguns, not under the Sullivan law, were involved in 8 per cent of New York criminal homicides but were involved in 16 per cent nationally. Therefore, the New York per cent of criminal homicides committed with rifles and shotguns is lower relative to the national average than is the per cent of homicides committed with handguns. This proves that the per cent of New York homicides which are committed with a firearm is lower than the national average because of cultural factors and not because of the effects of the Sullivan law.

* * *

The Postmaster General recently announced new regulations on the shipment of rifles and shotguns through the mails.

If he had been a little earlier, he could have been a hero. The whole problem of mail-order sales of firearms might have been solved by the Postmaster General. They could have been shipped to the local post office, not delivered until clearance came from the police department, and a fee paid to the postmaster for handling the operation.

* * *

On the national level, firearms of all types were involved in 3.4 per cent of the serious crimes in 1966. Even abolishing firearms, and assuming that criminals would not find illegal sources of firearms, will not solve the remaining 96.6 per cent of the serious crimes.

Firearms controls, restrictions or even registration are not a panacea to the nation's crime problem and the public is being done a disservice by those who try to make them think so.

In early April, NSSF released to the media, "Everyone agrees there should be reasonable controls on the ownership and use of firearms. Law enforcement agencies must have tools to control the misuse of firearms, and especially in times of civil disorders. At the same time, millions of law-abiding citizens should not be deprived of their rights to own and use firearms." We believe laws can be written which will accomplish this.

NSSF has the best documented statistical studies ever made on firearms and crime. We will be glad to send you: "The Misuse of Firearms in Crime — Extent of the Problem"; "The Relationship Between Firearms Licensing Laws and Crime Rates"; and "The Relationship Between Firearms Ownership and Crime Rates: A Statistical Analysis".

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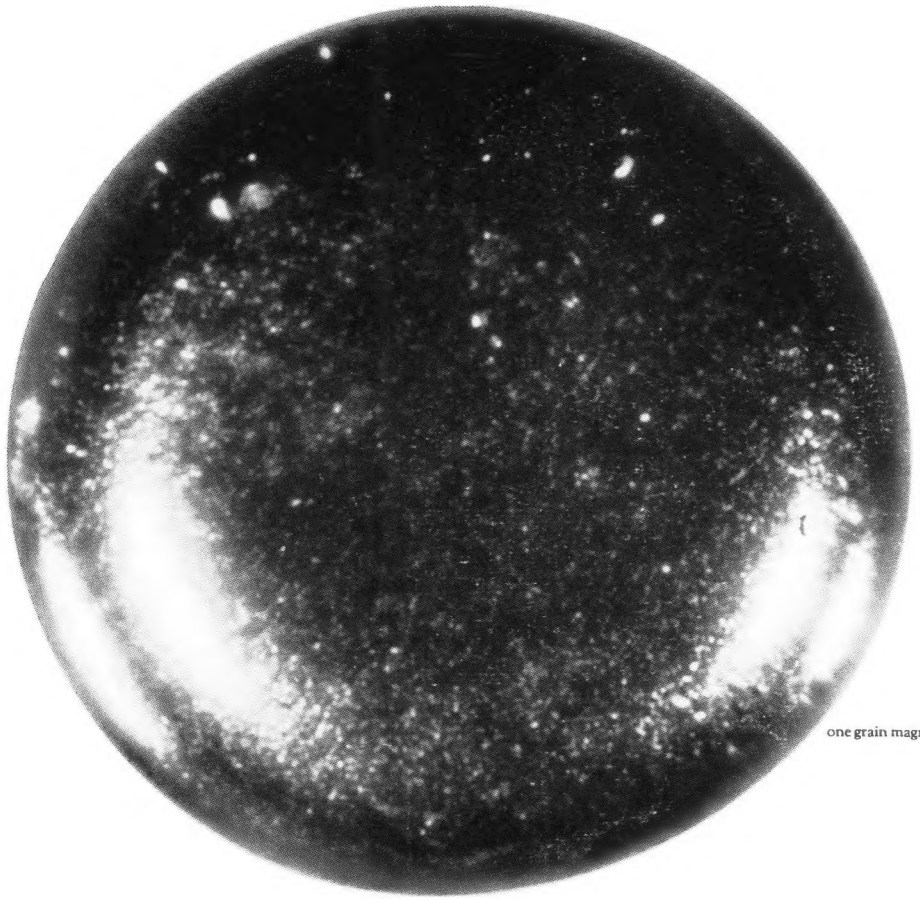

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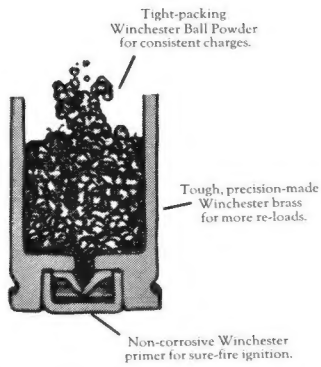
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